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STIC Database Tracking Number: 121811

TO: Ralph J Gitomer
Location: REM-3E71
Art Unit: 1651
Friday, May 14, 2004

20916

Case Serial Number: 09/980836

From: David Schreiber
Location: Biotech-Chem Library
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SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: R Gitomer Examiner #: 69630 Date: 5/11/04
Art Unit: 1651 Phone Number 30 272-0916 Serial Number: 09/980,836
Mail Box and Bldg/Room Location: Rem 3E71 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

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Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: _____

Inventors (please provide full names): _____

_____

Earliest Priority Filing Date: _____

For Sequence Searches Only *Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

CLAIMS 1-6

****

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Searcher: D. Schreiber
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Date Searcher Picked Up: _____
Date Completed: 5/14
Searcher Prep & Review Time: 12
Clerical Prep Time: _____
Online Time: 47

Type of Search

NA Sequence (#) _____
AA Sequence (#) _____
Structure (#) _____
Bibliographic ✓
Litigation _____
Fulltext _____
Patent Family _____
Other _____

Vendors and cost where applicable

STN 288.94
Dialog _____
Questel/Orbit _____
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Lexis/Nexis _____
Sequence Systems _____
WWW/Internet _____
Other (specify) _____

PTO-1590 (8-01)

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=> d his 1

     (FILE 'MEDLINE, HCAPLUS, BIOSIS, EMBASE, WPIDS, SCISEARCH, AGRICOLA'
     ENTERED AT 10:35:40 ON 14 MAY 2004)
L27           48 DUP REM L26 (22 DUPLICATES REMOVED)

=> d que l27
L1            32 SEA DEWEERD H?/AU
L2          8693 SEA HERNANDEZ J?/AU
L3          8722 SEA L1 OR L2
L4             1 SEA L3 AND MULTIPLE(2A) FLUOROPHORE#
L5             6 SEA MULTIPLE(2A) FLUOROPHORE#(5A) SCAN?
L6            28 SEA MULTIPLE(2A) FLUOROPHORE#(5A) IMAG?
L7          2052 SEA REVERS?(3A) SCAN?
L8           982 SEA FORWARD?(3A) SCAN?
L9           222 SEA L7 AND L8
L10            1 SEA L9 AND SCANNING(A) PROBE(A) MICROSCOPE#
L11        16853 SEA DIRECTION?(3A) SCAN?
L12          321 SEA L11 AND FLUOR?
L13           24 SEA L12 AND MULTIPL?
L14            1 SEA FLUORES?(A) SCAN? AND L13
L15          208 SEA L11 AND (CHIP? OR BIOCHIP?)
L16           48 SEA L15 AND MULTI?
L17            1 SEA L16 AND TIME(A) INTEGRAT?
L18            4 SEA L16 AND SUB(A) SCAN?
L20            1 SEA L15 AND SPECTR?(3A) OVERLAP?
L21            6 SEA L15 AND SPECTR?
L22         9164 SEA MULTIP?(3A) FLUOR?
L23          138 SEA L22 AND DIRECTION?
L24            1 SEA L23 AND AUTOCORRECT?
L25            6 SEA L23 AND FLUORESC?(A) IMAG?
L26           70 SEA (L4 OR L5 OR L6) OR L10 OR L13 OR L14 OR L17 OR L18 OR L20
                 OR L21 OR L24 OR L25
L27           48 DUP REM L26 (22 DUPLICATES REMOVED)


=> d ibib abs l27 1-48

L27  ANSWER 1 OF 48  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2004:307709  HCAPLUS
DOCUMENT NUMBER:          140:335191
TITLE:                    Method and apparatus for reading out biochemical
                          analysis data with laser
INVENTOR(S):              Kimura, Toshihito
PATENT ASSIGNEE(S):       Fuji Photo Film Co., Ltd., Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 73 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:
```

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004117272	A2	20040415	JP 2002-283386	20020927

PRIORITY APPLN. INFO.: JP 2002-283386 20020927

AB A method/apparatus for reading out biochem. anal. data with excellent quantitativity is provided, with which an excitation light is led only to a large number of accelerated phosphorescence-type **fluorescent** material layer regions on a support of accumulative **fluorescent** material sheet, and an accelerated phosphorescence light release is photoelec. detected. The method comprises placing on a sample stage an accumulative **fluorescent** material sheet on which **multiple** accelerated phosphorescence-type **fluorescent** material layer regions with selectively accumulated radiation energy ar formed sep. from each other, leading a laser light, irradiating the laser light successively upon moving an optical head for leading the released accelerated phosphorescence light to a photomultiplier in a main **scanning direction** and an addnl. **scanning direction**, photoelec. detecting the released accelerated phosphorescence light with the photomultiplier, irradiating a laser light for determining a position to the accumulative **fluorescent** material sheet, photoelec. detecting the laser light for determining a position scattered with the accumulative **fluorescent** material sheet, determining the position of the optical head based on the light quantity of the laser light photoelec. detected, and photoelec. detecting the accelerated phosphorescence light by irradiating a laser light. Diagrams describing the apparatus assembly are given.

L27 ANSWER 2 OF 48 MEDLINE on STN DUPLICATE 1

ACCESSION NUMBER:	2004157747 IN-PROCESS
DOCUMENT NUMBER:	PubMed ID: 15037598
TITLE:	Nerve-independent formation of a topologically complex postsynaptic apparatus.
AUTHOR:	Kummer Terrance T; Misgeld Thomas; Lichtman Jeff W; Sanes Joshua R
CORPORATE SOURCE:	Dept. of Anatomy and Neurobiology, Washington University School of Medicine, 660 South Euclid Ave., St. Louis, MO 63110.. sanesj@pcg.wustl.edu
SOURCE:	Journal of cell biology, (2004 Mar 29) 164 (7) 1077-87. Journal code: 0375356. ISSN: 0021-9525.
PUB. COUNTRY:	United States
DOCUMENT TYPE:	Journal; Article; (JOURNAL ARTICLE)
LANGUAGE:	English
FILE SEGMENT:	IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ENTRY DATE:	Entered STN: 20040331 Last Updated on STN: 20040331

AB As the mammalian neuromuscular junction matures, its acetylcholine receptor (AChR)-rich postsynaptic apparatus is transformed from an oval plaque into a pretzel-shaped array of branches that precisely mirrors the branching pattern of the motor nerve terminal. Although the nerve has

been believed to direct postsynaptic maturation, we report here that myotubes cultured aneurally on matrix-coated substrates form elaborately branched AChR-rich domains remarkably similar to those seen in vivo. These domains share several characteristics with the mature postsynaptic apparatus, including colocalization of multiple postsynaptic markers, clustering of subjacent myonuclei, and dependence on the muscle-specific kinase and rapsyn for their formation. Time-lapse imaging showed that branched structures arise from plaques by formation and fusion of AChR-poor perforations through a series of steps mirroring that seen in vivo. **Multiple fluorophore imaging** showed
that growth occurs by circumferential, asymmetric addition of AChRs. Analysis in vivo revealed similar patterns of AChR addition during normal development. These results reveal the sequence of steps by which a topologically complex domain forms on a cell and suggest an unexpected nerve-independent role for the postsynaptic cell in generating this topological complexity.

L27 ANSWER 3 OF 48 MEDLINE on STN DUPLICATE 2

ACCESSION NUMBER: 2004051814 MEDLINE
DOCUMENT NUMBER: PubMed ID: 14750889
TITLE: Fluorescence imaging in vivo: raster scanned point-source imaging provides more accurate quantification than broad beam geometries.
AUTHOR: Pogue Brian W; Gibbs Summer L; Chen Bin; Savellano Mark
CORPORATE SOURCE: Thayer School of Engineering, Dartmouth College, Hanover NH 03755, USA.. pogue@dartmouth.edu
CONTRACT NUMBER: PO1CA84203 (NCI)
SOURCE: Technology in cancer research & treatment, (2004 Feb) 3 (1) 15-21.
Journal code: 101140941. ISSN: 1533-0346.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200404
ENTRY DATE: Entered STN: 20040131
Last Updated on STN: 20040422
Entered Medline: 20040421

AB Two fluorescence imaging systems were compared for their ability to quantify mean fluorescence intensity from surface-weighted imaging of tissue. A broad beam CCD camera system was compared to a point sampling system that raster scans to create the image. The effects of absorption and scattering in the background tissue volume were shown to be similar in their effect upon the signal, but the effect of the three-dimensional shape of the tissue was shown to be a significant distortion upon the signal. Spherical phantoms with Intralipid and blood for absorber and scatterer were used with a fixed concentration of aluminum phthalocyanine fluorophore to illustrate that the mean intensity observed with the broad beam system increased with size, while the mean intensity observed with the raster scanned system was not as significantly affected. Similar results were observed in vivo with mice injected with the

fluorophore and **imaged multiple** times to observe the pharmacokinetics of the drug. The fluorescence in the tumor observed with the broad beam system was higher than that observed with the raster scanned system. Based upon the phantom and animal observations in this study, it should be concluded that using broad beam fluorescence imaging systems to quantify fluorescence in vivo may be problematic when comparing tissues with different three dimensional characteristics. In particular, the ratio of fluorescence from tumor to normal tissue can yield inaccurate results when the tumor is large. However, similar measurements with a narrow beam system that is raster scanned to create the images are not as significantly affected by the three dimensional shape of the tissue. Raster scanned imaging appears to provide a more uniform and accurate way to quantify fluorescence signals from distributed tissues in vivo.

L27 ANSWER 4 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-503879 [47] WPIDS
DOC. NO. NON-CPI: N2003-400041
TITLE: Image reader for copier, scanner, has light-receiving elements that deviate from each other in **sub-scanning direction** such that reading regions of image signals becomes identical.
DERWENT CLASS: P82 S06 T04 U13 W02
INVENTOR(S): MACHIDA, S
PATENT ASSIGNEE(S): (DASE) SEIKO INSTR INC; (MACH-I) MACHIDA S
COUNTRY COUNT: 2
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003067635	A1	20030410	(200347)*		10
JP 2003115984	A	20030418	(200347)		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003067635	A1	US 2002-245408	20020917
JP 2003115984	A	JP 2001-310086	20011005

PRIORITY APPLN. INFO: JP 2001-310086 20011005
AN 2003-503879 [47] WPIDS
AB US2003067635 A UPAB: 20030723
NOVELTY - **Multiple** image sensor integrated **chips** (ICs) (1-3) are divided into several blocks to read image signals output from terminals (12-14), respectively. An adjacent light receiving element (9) of each image sensor IC are arranged so as to be deviated from each other in a **sub-scanning direction** such that the reading regions of the image signals to be read in the same period in the **sub-scanning direction** becomes identical to

each other.

USE - For copiers and scanners.

ADVANTAGE - Since the image-reading region in which adjacent light receiving elements between adjacent blocks that read information on an original is not slipped in a **sub-scanning direction**, image is continuously read even in a joint between blocks in a reproduced image.

DESCRIPTION OF DRAWING(S) - The figure shows a plan view of an image sensor for use in the image reader.

image sensor ICs 1-3

substrate 7

light-receiving element 9

terminals 12-14

Dwg.2/12

L27 ANSWER 5 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2003-708356 [67] WPIDS

CROSS REFERENCE: 2002-636568 [68]; 2002-691535 [74]; 2003-492060 [46]; 2003-576423 [54]; 2003-596321 [56]; 2003-596341 [56]; 2003-635238 [60]; 2003-669796 [63]; 2003-851536 [79]; 2004-008843 [01]; 2004-068869 [07]

DOC. NO. NON-CPI: N2003-566013

DOC. NO. CPI: C2003-195281

TITLE: Detection system for biochemical interaction on biosensor, has light source generating collimated white light, beam splitter directing the light towards the sensor, and detection system including imaging **spectrometer.**

DERWENT CLASS: B04 D16 S03 T01

INVENTOR(S): KAWAMOTO, K; MATSUSHIA, N; TONEHIRA, K; CUNNINGHAM, B T; LI, P Y

PATENT ASSIGNEE(S): (OPNE-N) OPNEXT JAPAN INC; (NIOP-N) NIPPON OPNEXT KK; (SRUB-N) SRU BIOSYSTEMS LLC

COUNTRY COUNT: 28

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 2003059855	A1	20030327	(200367)*		53
EP 1298476	A2	20030402	(200367)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR					
JP 2003107295	A	20030409	(200367)		11

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 2003059855	A1 Provisional	US 2000-244312P	20001030
	Provisional	US 2001-283314P	20010412
	Provisional	US 2001-303028P	20010703

	CIP of	US 2001-930352	20010815
	CIP of	US 2002-52626	20020117
	CIP of	US 2002-59060	20020128
		US 2002-180374	20020626
EP 1298476	A2	EP 2002-1360	20020118
JP 2003107295	A	JP 2001-299942	20010928

PRIORITY APPLN. INFO: JP 2001-299942 20010928
AN 2003-708356 [67] WPIDS
CR 2002-636568 [68]; 2002-691535 [74]; 2003-492060 [46]; 2003-576423 [54]; 2003-596321 [56]; 2003-596341 [56]; 2003-635238 [60]; 2003-669796 [63]; 2003-851536 [79]; 2004-008843 [01]; 2004-068869 [07]
AB US2003059855 A UPAB: 20040128
NOVELTY - A biochemical detection system includes a biosensor (10) light source for generating collimated white light; a beam splitter directing the collimated white light (11) towards a surface of a sensor corresponding to the detector locations; and detection system including an imaging **spectrometer** receiving the reflected light (13) and generating an image of the reflected light.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for an instrument for calculating a peak wavelength comprising an incubator assembly for incubating a biosensor, an optical assembly illuminating the biosensor and collecting the reflected radiation from the biosensor, **spectrometer** receiving the reflected radiation, and software deriving a peak wavelength from the reflected and detected wavelength.

USE - The system is for detecting a biochemical interaction on a biosensor (claimed) e.g. high throughput screening of pharmaceutical libraries with protein targets, and microarray screening of protein-protein interactions for proteomics.

ADVANTAGE - The system detects the binding of specific binding substances to their respective binding partners. It provides a peak location than can be determined in a majority of cases to within a fraction of a 0.1-0.05 nm. The biosensor can be manufactured using plastic, thus can be inexpensively incorporated into common disposable laboratory assay platforms such as microtiter plates and microarray slides. It allows biochemical interactions to be measured on the sensor's surface without the use of fluorescent tags or colorimetric labels.

DESCRIPTION OF DRAWING(S) - The figure is a schematic diagram of optical grating structure.

Biosensor 10
Collimated white light 11
Substrate layer 12
Reflected light 13
Grating 16
Dwg.1A/25

L27 ANSWER 6 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2004-065428 [07] WPIDS
DOC. NO. NON-CPI: N2004-052902
DOC. NO. CPI: C2004-027390

TITLE: Producing data for biochemistry analysis comprises using mutually separated biological samples mounted on single sample stage in matrix form, such that **multiple** scanners are provided for samples in one line of matrix.
DERWENT CLASS: B04 D16 P82 S03
PATENT ASSIGNEE(S): (FUJF) FUJI PHOTO FILM CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2003294628	A	20031015	(200407)*		99

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2003294628	A	JP 2002-96117	20020329

PRIORITY APPLN. INFO: JP 2002-96117 20020329
AN 2004-065428 [07] WPIDS
AB JP2003294628 A UPAB: 20040128
NOVELTY - Producing data for biochemistry analysis comprising using mutually separated biological samples mounted on single sample stage (133) in matrix form, with a label, such that **multiple** scanners (130a-130j) are provided for samples in each line, where a **fluorescent** material carrier is mounted upwards of scanners fixed to substrate (131), is new.

DETAILED DESCRIPTION - Producing data for biochemistry analysis comprises using mutually separated biological samples mounted on single sample stage (133) in matrix form, with a label, such that **multiple** scanners (130a-130j) are provided for samples in each line, where a **fluorescent** material carrier is mounted upwards of scanners fixed to substrate (131) and each scanner has laser diode for emitting laser radiation (140) with respect to samples and photomultiplier for detecting reflected radiation. Several through-holes (133a) for alignment are formed in sample stage at position corresponding to carrier pins. The substrate is movable in main and sub-**scanning direction** intermittently by a pitch equal to distance between the adjacent phosphorescent **fluorescent** material layer areas formed at the support of the **fluorescent** material sheet. The bright light discharged from each phosphorescent layer area is detected by the photo **multipliers** photoelectrically. The generated analog data are converted into digital data and stored in a data buffer.

An INDEPENDENT CLAIM is also included for a scanner.

USE - The method is used for producing data for biochemical analysis of samples (claimed), such as cell, virus, hormone, tumor marker, enzyme, antibody, antigen, abzyme, other protein, nucleic acid, cDNA, DNA, RNA and substance derived from living body.

ADVANTAGE - The **fluorescent** data recorded on each

phosphorescent **fluorescent** material area are read efficiently.

DESCRIPTION OF DRAWING(S) - The figure shows a perspective view of the scanner apparatus.

Scanner apparatus 37
Scanners 130a-j
Substrate 131
Openings 132a-j
Sample stage 133
Through-holes 133a
Laser radiation 140
Dwg.18/35

L27 ANSWER 7 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-793939 [75] WPIDS
DOC. NO. NON-CPI: N2003-636341
TITLE: Radiation image information reader for CRT image display device, satisfies specific relationship between certain parameters, for reading stored electric charges of charge coupled device line sensor.
DERWENT CLASS: P82 S03 T01 V05
PATENT ASSIGNEE(S): (FUJF) FUJI PHOTO FILM CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2003241330	A	20030827	(200375)*		9

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2003241330	A	JP 2002-46572	20020222

PRIORITY APPLN. INFO: JP 2002-46572 20020222
AN 2003-793939 [75] WPIDS
AB JP2003241330 A UPAB: 20031120

NOVELTY - A reading unit (21) reads the stored electric charges of a charge coupled device (CCD) line sensor (17), when the relation S **multiply** t=K(NB asterisk W) is satisfied, where S is speed of a sub-scanning unit (18) which scans a **fluorescent** material (13) using excitation light (10), t is charge storage time of sensor, W is size of the photosensitive portion of CCD along main **scanning direction**, NB is the number of pixels set to be (2 at most NB) and K is a constant.

USE - For cathode ray tube (CRT) image display device.

ADVANTAGE - The pixel density ratio along the main **scanning** and sub-**scanning directions**, is fixed by setting preset relationship between specific parameters, thereby optimizing the image quality.

DESCRIPTION OF DRAWING(S) - The figure shows the block diagram of the radiation image information reader.
excitation light 10
fluorescent material 13
CCD line sensor 17
sub-scanning unit 18
reading unit 21
Dwg.1/7

L27 ANSWER 8 OF 48 MEDLINE on STN DUPLICATE 3
ACCESSION NUMBER: 2003048297 MEDLINE
DOCUMENT NUMBER: PubMed ID: 12557983
TITLE: Respiration-correlated spiral CT: a method of measuring respiratory-induced anatomic motion for radiation treatment planning.
AUTHOR: Ford E C; Mageras G S; Yorke E; Ling C C
CORPORATE SOURCE: Memorial Sloan-Kettering Cancer Center, Department of Medical Physics, 1275 York Avenue, New York, New York 10021, USA.
CONTRACT NUMBER: 5-PO1-CA59017 (NCI)
T32CA61801 (NCI)
SOURCE: Medical physics, (2003 Jan) 30 (1) 88-97.
Journal code: 0425746. ISSN: 0094-2405.
PUB. COUNTRY: United States
DOCUMENT TYPE: (EVALUATION STUDIES)
Journal; Article; (JOURNAL ARTICLE)
(VALIDATION STUDIES)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200307
ENTRY DATE: Entered STN: 20030202
Last Updated on STN: 20030723
Entered Medline: 20030722

AB We describe a method for generating CT images at **multiple** respiratory phases with a single spiral CT scan, referred to as respiratory-correlated spiral CT (RCCT). RCCT relies on a respiration wave form supplied by an external patient monitor. During acquisition this wave form is recorded along with the initiation time of the CT scan, so as to "time stamp" each reconstructed slice with the phase of the respiratory cycle. By selecting the appropriate slices, a full CT image set is generated at several phases, typically 7-11 per cycle. The CT parameters are chosen to optimize the temporal resolution while minimizing the spatial gap between slices at successive respiratory cycles. Using a pitch of 0.5, a gantry rotation period of 1.5 s, and a 180 degrees reconstruction algorithm results in approximately 5 mm slice spacing at a given phase for typical respiration periods, and a respiratory motion within each slice that is acceptably small, particularly near end expiration or end inspiration where gated radiotherapy is to occur. We have performed validation measurements on a phantom with a moving sphere designed to simulate respiration-induced tumor motion. RCCT scans of the phantom at respiratory periods of 4, 5, and 6 s show good agreement of the

sphere's motion with that observed under **fluoroscopic** imaging. The positional deviations in the sphere's centroid between RCCT and **fluoroscopy** are 1.1+/-0.9 mm in the transaxial **direction** (average over all **scans** at all phases +/-1 s.d.) and 1.2+/-1.0 mm in the longitudinal direction. Reconstructed volumes match those expected on the basis of stationary-phantom scans to within 5% in all cases. The surface distortions of the reconstructed sphere, as quantified by deviations from a mathematical reference sphere, are similar to those from a stationary phantom scan and are correlated with the speed of the phantom. A RCCT scan of the phantom undergoing irregular motion, demonstrates that successful reconstruction can be achieved even with irregular respiration. Limitations from x-ray tube heating in our current CT unit restrict the length of the scan region to 9 cm for the RCCT settings used, though this will not be a limitation for a multislice scanner. RCCT offers an alternative to the current method of respiration-triggered axial scans. **Multiple** phases of respiration are imaged with RCCT in approximately the same scanning time required to image a single phase with a triggered axial scan. RCCT scans can be used in connection with respiratory-gated treatment to identify the patient-specific phase of minimum tumor motion, determine residual tumor motion within the gate interval, and compare treatment plans at different phases.

L27 ANSWER 9 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-528176 [56] WPIDS
DOC. NO. NON-CPI: N2002-418159
DOC. NO. CPI: C2002-149546
TITLE: **Autocorrection** function-embedded confocal optics-based **fluorometric** analyzers for studying behaviors of **fluorescence**-labeled molecules particularly intracellular biological molecules like proteins at molecular level.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): KATO, N; SAKAMOTO, H
PATENT ASSIGNEE(S): (OLYU) OLYMPUS OPTICAL CO LTD
COUNTRY COUNT: 6
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2002048693	A1	20020620	(200256)*	JA	109
RW: DE FR GB SE					
W: JP US					
EP 1351048	A1	20031008	(200370)	EN	
R: DE FR GB SE					
US 2004051051	A1	20040318	(200421)		
JP 2002549951	X	20040415	(200426)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE

WO 2002048693	A1	WO 2001-JP10998	20011214
EP 1351048	A1	EP 2001-270763	20011214
		WO 2001-JP10998	20011214
US 2004051051	A1 Cont of	WO 2001-JP10998	20011214
		US 2003-460845	20030613
JP 2002549951	X	WO 2001-JP10998	20011214
		JP 2002-549951	20011214

FILING DETAILS:

PATENT NO	KIND	PATENT NO
EP 1351048	A1 Based on	WO 2002048693
JP 2002549951	X Based on	WO 2002048693

PRIORITY APPLN. INFO: JP 2001-22105 20010130; JP 2000-380327 20001214

AN 2002-528176 [56] WPIDS

AB WO 200248693 A UPAB: 20020903

NOVELTY - A **fluorometric** analyzer comprises a laser light source (51), an optical system (53-59) for focusing the light beam from laser light source to a sample to form a confocal region, another optical system (61-65) for focusing **fluorescence** from the sample, a light detector (66) for measuring intensity, and a recording means (67) to record the variation of intensity in the measured **fluorescence.**

DETAILED DESCRIPTION - A **fluorometric** analyzer comprises a laser light source (51), an optical system (53-59) for focusing the light beam from laser light source to a sample to form a confocal region, another optical system (61-65) for focusing **fluorescence** from the sample, a light detector (66) for measuring intensity of the focused **fluorescence**, and a recording means (67) to record the variation of intensity in the **fluorescence** measured by the recorder, in which the change in intensity after irradiating the sample with a light beam for a definite time, **fluorescence** intensity of the excited **fluorescent** molecule is measured so that analytical data related to the **fluorescent** molecule can be obtained.

INDEPENDENT CLAIMS are also included for the following:

(1) a similar analyzer in which a means for detecting attenuation factor (69) of **fluorescence** intensity is also added to record the attenuation of **fluorescence** over a defined time after the initial measurement of **fluorescence**, particularly with 2 or more specified values for **fluorescence** analysis continuously after light beam irradiation on the sample;

(2) another analyzer in which a means (70, 72) for adjusting light intensity is installed as well to regulate light beam from the laser light source (51) and optionally with a scanning mechanism for scanning confocal region of the sample, and with a sample stage for supporting a substrate on which a sample containing **fluorescent** molecules is placed, and

(3) **fluorometric** analysis on the behavior of

fluorescent molecules by using any of the analyzers to examine a sample containing such **fluorescent** molecules.

USE - The analyzers are for studying behaviors of **fluorescence**-labeled molecules particularly intracellular biological molecules like proteins at molecular level, e.g. protein functions and interactions.

ADVANTAGE - Such analyzers are stable and convenient to operate, thereby enabling easy performance of **fluorescence** correlation spectroscopy, **fluorescence** intensity distribution analysis and **fluorescence** intensity **multiple** distribution analysis.

DESCRIPTION OF DRAWING(S) - Structure of a **fluorometric** analyzer. (Drawing includes non-English language text).

Laser light source 51
reflective mirrors 53, 54
interference mirror 55
lense 56
excitation filter 57
dichroism mirror 58
object lens 59
optical system for light focusing 61-65
photodetector 66
fluorescence intensity recorder 67
fluorescence intensity maximum recorder 68
means for detecting **fluorescence** intensity attenuation factor 69
light attenuation selecting means 70
controller 72
side chamber where sample cells are cultivated a
direction of Z axis b
direction of Y axis c
direction of X axis d
Dwg.13/24

L27 ANSWER 10 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-493280 [53] WPIDS
DOC. NO. NON-CPI: N2002-390006
TITLE: Solid-state scanning type optical writing-in apparatus performs ON-OFF control of several optical elements in parallel such that width of main **scanning directions** of optical element is different from other.
DERWENT CLASS: P75 P81 T04 U12 V07
PATENT ASSIGNEE(S): (MIOC) MINOLTA CAMERA KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2002086802	A	20020326	(200253)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2002086802	A	JP 2000-276178	20000912

PRIORITY APPLN. INFO: JP 2000-276178 20000912
AN 2002-493280 [53] WPIDS
AB JP2002086802 A UPAB: 20020820
NOVELTY - The ON-OFF control of several optical shutter elements (22) corresponding to **multiple** rows is performed in parallel along a main **scanning direction**, such that the width of the main **scanning direction** of an optical element is different from that of the other optical element.

USE - Used for on-off control of several optical elements such as PIZT, LED, liquid crystal and **fluorescent** display object, etc.

ADVANTAGE - Obtains a high quality image, irrespective of optical resolution distribution variation of the image formation lens array.

DESCRIPTION OF DRAWING(S) - The figure shows the top views of the element array of the processed optical shutter tip. (Drawing includes non-English language text).

Optical shutter elements 22

Dwg.5/12

L27 ANSWER 11 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2003-184937 [19] WPIDS
DOC. NO. NON-CPI: N2003-145639
DOC. NO. CPI: C2003-048888
TITLE: Multispectral imaging gene chip scanning instrument.
DERWENT CLASS: B04 D16 S03
INVENTOR(S): HU, Q; LIU, M; WANG, W
PATENT ASSIGNEE(S): (SHAN-N) SHANGHAI PRECISION OPTICAL INSTR INST
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
CN 1375691	A	20021023	(200319)*		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
CN 1375691	A	CN 2002-111141	20020322

PRIORITY APPLN. INFO: CN 2002-111141 20020322
AN 2003-184937 [19] WPIDS
AB CN 1375691 A UPAB: 20030320
NOVELTY - A gene chip scanner used for detecting **fluorescently** -labeled post-hybridization gene biological chips, is new.

DETAILED DESCRIPTION - Scanning the chip comprises:

(a) a laser beam is saped by linear shaper and passed through a reflector with slit to form a linear laser beam on the tested chip;

(b) the optical signal fed back by tested chip is passed through the reflector with slit and reflected, then passed through a photographic optical system and image in the slit diaphragm position;

(c) when it is excited by using laser beam with **multiple** wavelength, said signal is further passed through first imaging lens, dispersing element and second imaging lens and reflected on the detector of electric charge coupler with face array or line array.

As compared with existent technology, it not only can simplify **scanning direction**, save detection time, but also can raise the resolution and accuracy of the detection.

Dwg.0/0

L27 ANSWER 12 OF 48 MEDLINE on STN DUPLICATE 4

ACCESSION NUMBER: 2002130959 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11865992
TITLE: A slot-scanned photodiode-array/CCD hybrid detector for digital mammography.
AUTHOR: Mainprize James G; Ford Nancy L; Yin Shi; Tumer Turmay; Yaffe Martin J
CORPORATE SOURCE: Department of Medical Biophysics, University of Toronto, Sunnybrook and Women's College Health Sciences Centre, Ontario, Canada.. mprize@sten.sunnybrook.utoronto.ca
CONTRACT NUMBER: R01CA66015 (NCI)
SOURCE: Medical physics, (2002 Feb) 29 (2) 214-25. Journal code: 0425746. ISSN: 0094-2405.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200208
ENTRY DATE: Entered STN: 20020228
Last Updated on STN: 20020820
Entered Medline: 20020819

AB We have developed a novel direct conversion detector for use in a slot-scanning digital mammography system. The slot-scan concept allows for dose efficient scatter rejection and the ability to use small detectors to produce a large-area image. The detector is a hybrid design with a 1.0 mm thick silicon PIN photodiode array (the x-ray absorber) indium-bump bonded to a CCD readout that is operated in time-delay integration (TDI) mode. Because the charge capacity requirement for good image quality exceeds the capabilities of standard CCDs, a novel CCD was developed. This CCD consists of 24 independent sections, each acting as a miniature CCD with eight rows for TDI. The signal from each section is combined off-**chip** to produce a full signal image. The MTF and DQE for the device was measured at several exposures and compared to a linear systems model of signal and noise propagation. Because of the scanning nature of TDI imaging, both the MTF(f) and DQE(f) are reduced along the **direction** of the **scanning** motion. For a 26

kVp **spectrum**, the DQE(0) was measured to be 0.75+/-0.02 for an exposure of 1.29 x 10(-5) C/kg (50 mR).

L27 ANSWER 13 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2002-088911 [12] WPIDS
DOC. NO. NON-CPI: N2002-065464
DOC. NO. CPI: C2002-027308
TITLE: **Fluorescence scanner**, for DNA analysis, comprises multi-frequency laser and optical system, including focusing lenses and pair of optical fibers that transmit **spectral** emissions from lenses to detector.
DERWENT CLASS: E13 J04 S03
INVENTOR(S): DORSEL, A N; HOTZ, C Z
PATENT ASSIGNEE(S): (AGIL-N) AGILENT TECHNOLOGIES INC
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 6320196	B1	20011120 (200212)*			9

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 6320196	B1	US 1999-238482	19990128

PRIORITY APPLN. INFO: US 1999-238482 19990128
AN 2002-088911 [12] WPIDS
AB US 6320196 B UPAB: 20020221
NOVELTY - **Fluorescence scanner** for scanning sample labelled with luminescence dyes comprises laser to form two light beams at different wavelengths and optical system. The optical system includes focusing lenses and pair of optical fibers that transmit **spectral** emissions from lenses to detector, to focus the beams on separate spots, and to collect and transmit the resulting emission through respective apertures, to which detector is associated.

DETAILED DESCRIPTION - Multi-frequency laser induced **fluorescence scanner** for scanning sample labelled with luminescence dyes to cause **fluorescence** emission of light at different wavelengths comprises at least one laser to form two light beams at at least two wavelengths, each preferentially exciting one of the dyes, and optical system for focusing the beams on separate spots, and for collecting and transmitting the resulting emission through respective apertures, to which is associated detector to measured emitted signal level. The optical system includes focusing lenses and pair of optical fibers that transmit **spectral** emissions from lenses to detector.

An INDEPENDENT CLAIM is included for a method of detecting **fluorescence** from a sample labelled with **fluorescent**

dyes using the above scanner, by scanning the spots across the sample in one **direction** and a slow **scan direction.** The resulting emission from the dye labelled sample to a detector generates an output signal representative of the **fluorescence** from the sample, where each detector only receives light from a spatially defined area illuminated by the laser that preferentially excites the dye for detection. Spot separation in the slow **scan direction** ensures that the exited dyes have fully recovered from any triplet saturation before the next laser beam scans them.

USE - For DNA analysis.

ADVANTAGE - A scanner often needs to be able to differentiated between different kinds of molecules with as little crosstalk as possible, particularly for analysis of hybridized components. Crosstalk reduces the signal to noise ratio, and can be reduced only by using time consuming procedures or with use of more powerful lasers. However, the novel scanner provides a system to reduce crosstalk and scan time by scanning effectively at **multiple** frequencies simultaneously.

DESCRIPTION OF DRAWING(S) - The drawing shows a simplified schematic of the scanner.

Dwg.1/4

L27 ANSWER 14 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2001-491484 [54] WPIDS
DOC. NO. NON-CPI: N2001-363755
TITLE: Laser scanning optical instrument has semiconductor laser that injects laser beam to state wherein active layer inclines towards **sub-scanning direction** crossing orthogonally from main **scanning direction.**
DERWENT CLASS: P81 S06 T04 V07
PATENT ASSIGNEE(S): (MIOC) MINOLTA CAMERA KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2001108929	A	20010420	(200154)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2001108929	A	JP 1999-290801	19991013

PRIORITY APPLN. INFO: JP 1999-290801 19991013
AN 2001-491484 [54] WPIDS
AB JP2001108929 A UPAB: 20010924
NOVELTY - The instrument includes a collimator lens which collimate **multiple** laser beams, and a deflecting unit which deflects the main **scanning direction** (X) of the collimated laser

beams to scan an active layer (20). A semiconductor laser (LD) performs the injection of laser beam to state by which active layer inclines towards a **sub-scanning direction** crossing orthogonally from the main **scanning direction.**

USE - Used for image forming apparatus e.g. digital copier, laser printer.

ADVANTAGE - Improves the luminous efficiency of the laser scanning optical instrument. Increases the light quantity of the laser beam irradiated on the collimator lens. Enables to narrow the width of the main **scanning direction** at the time of irradiating on the collimator lens of the laser beam.

DESCRIPTION OF DRAWING(S) - The figure shows the isometric diagram of the **chip** section of the semiconductor laser.

Active layer 20

Semiconductor laser LD

Main **scanning direction** X

Dwg.3/5

L27 ANSWER 15 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2002-133077 [18] WPIDS

DOC. NO. NON-CPI: N2002-100485

TITLE: **Multibeam** scanning light source device for digital copiers, has semiconductor laser **chip** and stem holding **chip** configured in main **scanning direction.**

DERWENT CLASS: P75 P81 S06 T04 U12 V07 V08

PATENT ASSIGNEE(S): (RICO) RICOH KK

COUNTRY COUNT: 1

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2001091874	A	20010406	(200218)*		6

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2001091874	A	JP 1999-272635	19990927

PRIORITY APPLN. INFO: JP 1999-272635 19990927

AN 2002-133077 [18] WPIDS

AB JP2001091874 A UPAB: 20020319

NOVELTY - The semiconductor laser **chips** (1a,2a) and the stems (1b,2b) holding the **chips** are configured in the main **scanning direction.**

USE - In digital copier, LBP, etc.

ADVANTAGE - Variation of the beam pitch in the **sub-scanning direction** due to environment variation can be prevented and optical characteristics can be improved, as the

semiconductor laser **chip** and the stem holding it are configured in main **scanning direction.**

DESCRIPTION OF DRAWING(S) - The figure shows the front view of the radiation side of light source.

Tip 1a,2a

Stem 1b,2b

Dwg.1/7

L27 ANSWER 16 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2003-292195 [29] WPIDS

DOC. NO. NON-CPI: N2003-232434

DOC. NO. CPI: C2003-076176

TITLE: Methods and apparatus for the measurement of radiation, especially **fluorescence**, emitted by samples in biochemical assays.

DERWENT CLASS: B04 D16 J04 S03 S05

INVENTOR(S): HOOPER, C E; RUSHBOOKE, J G; RUSHBROOKE, J G

PATENT ASSIGNEE(S): (CAMB-N) CAMBRIDGE IMAGING LTD; (PACB) PACKARD INSTR CO INC

COUNTRY COUNT: 92

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
GB 2351556	A	20010103	(200329)*		30
AU 2000043077	A	20010131	(200329)		
EP 1190232	A1	20020327	(200329)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
WO 2001001112	A1	20010104	(200329)	EN	
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW					
W: AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW					

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
GB 2351556	A	GB 2000-9697	20000420
AU 2000043077	A	AU 2000-43077	20000420
EP 1190232	A1	EP 2000-922798	20000420
		WO 2000-GB1576	20000420
WO 2001001112	A1	WO 2000-GB1576	20000420

FILING DETAILS:

PATENT NO	KIND	PATENT NO

AU 2000043077 A Based on WO 2001001112
EP 1190232 A1 Based on WO 2001001112

PRIORITY APPLN. INFO: GB 1999-15032 19990629; GB 1999-14902 19990626
AN 2003-292195 [29] WPIDS
AB GB 2351556 A UPAB: 20030505
NOVELTY - Improved methods and apparatus for the measurement of radiation, especially **fluorescence**, emitted by samples in assays, are new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) a method (I) for measuring radiation, in which a number (N) of single channel confocal optical systems and photoelectric detectors or detecting areas are arranged in parallel to form a number of reading heads arranged side-by-side so as simultaneously to read a corresponding number of adjacent sites emitting radiation;

(2) a method (II) of imaging a number of micro-sample light emitting sites simultaneously onto separately addressable detectors, which may simply be discrete regions of the array detector, so that light emitted from each site can be monitored by one of the detectors, wherein a corresponding number of objective lenses are located adjacent to the micro-sample array with one objective lens for each micro-sample, the latter are located at or near the focal point of each of the lenses so that light emanating from each micro-sample is collected by its respective objective lens and converted into a beam of parallel or near parallel rays, the objective lenses are arranged so that the axes of all the beams issuing therefrom are parallel and spaced apart, and the beams are focused by a focusing lens through a single point and collected beyond that point by detector lens means which serves to reconstitute the parallel beams for presentation to the detector array;

(3) apparatus (III) adapted for performing the methods (I) and (II), comprising a system for supporting a micro-sample array on a substrate in close proximity but parallel to an array of micro lenses arranged so as to correspond on a 1 to 1 basis with the positions and spacing of at least some of the micro-samples on the substrate. Each of the micro lenses is positioned relative to a region of its related micro-sample by a distance equal to the focal length of the lens so that light emitted from that region of the micro-sample will emerge from the lens as a parallel beam parallel to the axis of the lens, and the parallel beams of light are focused by means of a single focusing lens onto a detector lens so as to produce an image of the micro-sample light emissions in the plane of an array of individually addressable photoelectric detectors, such as regions of an addressable CCD array, and circuit means is provided to which signals read out from the array are supplied in the form of a sequence of digital values or otherwise, each corresponding to the light incident on a region of the detector for a given period of time from one of the micro-samples, and computing and analyzing circuit means is provided, responsive to the electrical signals, together with memory means for storing data indicative of the light found to be emitted from each of the micro-samples, for storing those values together with address information, whereby each stored value can be identified with the micro-sample on the substrate from which the light giving that value has been emitted by

reference to the position of the region in the detector array and by correlating the position of the sample in the sample array; and

(4) a method (IV) of analyzing **fluorescence** emitted by radiation excited samples in an array of samples comprising, focusing light emitted from each said sample at infinity so as to form a parallel beam, in parallel with the light from all of the other sample sites making up the array, subsequently focusing all the parallel light paths through a single point and locating at the point a small aperture to restrict unwanted light from **fluorescing** material upstream and downstream of the sites of interest in the samples, and re-establishing a parallel array of light beams by the use of a further lens to present (to an addressable detector array) a number of parallel light paths corresponding to the light paths from the samples, and individually addressing different regions of the detector array onto which the parallel light paths impinge, to determine the light incident thereon, and storing data relating to the quantity of incident light on each said region of the detector array together with address information to enable the data to be reconciled with the position of the sample in the array on the substrate to which that data relates.

USE - The methods and apparatus are used for the measurement of radiation, especially **fluorescence**, emitted by samples in assays especially for biological, bio-medical and chemical research.

ADVANTAGE - Only 1 laser source is used which may be split into a number of beams conveyed by fibre optic cable to individual sample sites.

DESCRIPTION OF DRAWING(S) - Apparatus for the measurement of radiation, especially **fluorescence**, emitted by samples in assays.

Ion laser 10
Lenses 12,14 and 18
Beam splitter 16
Stage 20
Site assay 22
Focusing lens 26
Dwg.2/5

L27 ANSWER 17 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER:	2000:911458 HCAPLUS
DOCUMENT NUMBER:	134:53472
TITLE:	Improved **scanner** for simultaneous **image** acquisition using **multiple fluorophore** probe dyes to form computerized biochip image of DNA specimen
INVENTOR(S):	**Deweerd, Herman; Hernandez, Jose D.**
PATENT ASSIGNEE(S):	Virtek Vision Corporation, USA
SOURCE:	PCT Int. Appl., 13 pp. CODEN: PIXXD2
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000078993	A1	20001228	WO 2000-US16795	20000616
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
GB 2366930	A1	20020320	GB 2001-28260	20000616
GB 2366930	B2	20031119		
PRIORITY APPLN. INFO.:			US 1999-139991P	P 19990618
			WO 2000-US16795	W 20000616

AB An optical instrument assembly for scanning biochips for DNA samples includes a transmitter for projecting an optical signal having at least a first and a second spectral array onto a DNA-containing specimen. A detector includes a sensor for detecting an emitted optical signal from the specimen. A first drive mechanism varies the position of the optical signal on the specimen in a forward and a reverse **direction.** A second drive mechanism varies the position of the specimen relative to the optical signal. A controller terminates detection of one of the spectral arrays while varying the position of the optical signal in the forward **direction** and terminates detection of the other spectral array while varying the position of the optical signal in the reverse **direction.**

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 18 OF 48 BIOSIS COPYRIGHT 2004 BIOLOGICAL ABSTRACTS INC. on STN

ACCESSION NUMBER: 2001:1332 BIOSIS
DOCUMENT NUMBER: PREV200100001332
TITLE: Method for simultaneous detection of multiple fluorophores for in situ hybridization and multicolor chromosome painting and banding.
AUTHOR(S): Garini, Yuval [Inventor, Reprint author]; Cabib, Dario [Inventor]; Buckwald, Robert A. [Inventor]; Ried, Thomas [Inventor]; Soenksen, Dirk G. [Inventor]
CORPORATE SOURCE: Mizpe Koranit, Israel
ASSIGNEE: Applied Spectral Imaging Ltd., Migdal, Israel
PATENT INFORMATION: US 6066459 May 23, 2000
SOURCE: Official Gazette of the United States Patent and Trademark Office Patents, (May 23, 2000) Vol. 1234, No. 4. e-file.
CODEN: OGUPE7. ISSN: 0098-1133.
DOCUMENT TYPE: Patent
LANGUAGE: English
ENTRY DATE: Entered STN: 21 Dec 2000
Last Updated on STN: 21 Dec 2000

AB A spectral **imaging** method for simultaneous detection of

multiple fluorophores aimed at detecting and analyzing fluorescent in situ hybridizations employing numerous chromosome paints and/or loci specific probes each labeled with a different fluorophore or a combination of fluorophores for color karyotyping, and at multicolor chromosome banding, wherein each chromosome acquires a specifying banding pattern, which pattern is established using groups of chromosome fragments labeled with various fluorophore or combinations of fluorophores.

L27 ANSWER 19 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2000-224659 [19] WPIDS
DOC. NO. CPI: C2000-068720
TITLE: Confocal scanning system comprises microlens array or a fiber bundle, and detection devices.
DERWENT CLASS: B04
INVENTOR(S): DIETZ, L J; NORTON, S; WALTON, I
PATENT ASSIGNEE(S): (SURR-N) SURROMED INC; (SURR-N) SURROMED; (DIET-I) DIETZ L J; (NORT-I) NORTON S; (WALT-I) WALTON I
COUNTRY COUNT: 89
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
WO 2000011024	A2	20000302	(200019)*	EN	33
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW					
W: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW					
AU 9959001	A	20000314	(200031)		
EP 1121582	A2	20010808	(200146)	EN	
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI					
KR 2001090718	A	20011019	(200221)		
ZA 2001001459	A	20020424	(200237)		42
AU 749690	B	20020704	(200255)		
JP 2002523731	W	20020730	(200264)		37
NZ 510096	A	20030228	(200323)		
US 6603537	B1	20030805	(200353)		
MX 2001001887	A1	20020201	(200362)		
US 2004079893	A1	20040429	(200429)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
WO 2000011024	A2	WO 1999-US19374	19990820
AU 9959001	A	AU 1999-59001	19990820
EP 1121582	A2	EP 1999-946632	19990820
		WO 1999-US19374	19990820
KR 2001090718	A	KR 2001-702397	20010221

ZA 2001001459	A	ZA 2001-1459	20010221
AU 749690	B	AU 1999-59001	19990820
JP 2002523731	W	WO 1999-US19374	19990820
		JP 2000-566296	19990820
NZ 510096	A	NZ 1999-510096	19990820
		WO 1999-US19374	19990820
US 6603537	B1 Provisional	US 1998-97506P	19980821
		US 1999-378259	19990820
MX 2001001887	A1	WO 1999-US19374	19990820
		MX 2001-1887	20010221
US 2004079893	A1 Provisional	US 1998-97506P	19980821
	Div ex	US 1999-378259	19990820
		US 2003-635917	20030805

FILING DETAILS:

PATENT NO	KIND		PATENT NO
AU 9959001	A	Based on	WO 2000011024
EP 1121582	A2	Based on	WO 2000011024
AU 749690	B	Previous Publ.	AU 9959001
		Based on	WO 2000011024
JP 2002523731	W	Based on	WO 2000011024
NZ 510096	A	Based on	WO 2000011024
MX 2001001887	A1	Based on	WO 2000011024
US 2004079893	A1	Div ex	US 6603537

PRIORITY APPLN. INFO: US 1998-97506P 19980821; US 1999-378259 19990820; US 2003-635917 20030805

AN 2000-224659 [19] WPIDS

AB WO 200011024 A UPAB: 20021105

NOVELTY - A confocal scanning system comprises:

(a) a microlens array or a fiber bundle for generating and scanning over a sample of spots of excitation light, with an emission light released by the sample in response to excitation by each spot; and

(b) one or more detection devices positioned so that the emission light is simultaneously imaged

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a system for time-resolved confocal scanning comprising, microlens array or fiber bundles for generating and scanning over a sample along an axis one or more diffraction-limited spots of excitation light; confocal apertures comprising pixel bins, positioned so that the emission light resulting from excitation of the sample by one of the spots is imaged; and a CCD for light detection operatively coupled to the confocal apertures.

USE - The system is for performing charge couple device (CCD)-based confocal spectroscopy with a laser spot array. The system is also useful in any spectroscopic application, e.g. microscopy and microvolume laser scanning cytometry (MLSC).

ADVANTAGE - Two features of the invention solve the limitations of the prior art. Firstly, the high power laser excitation is divided into

multiple spots, thus reducing the power density in each spot and minimizing sensitivity and laser power limitations due to **fluorophore** saturation. Secondly, the CCD is used in a non-imaging mode, by defining **multiple** effective confocal apertures as binned regions of pixel on the 2 dimensional surface of the device. Dwg.0/9

L27 ANSWER 20 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 2000-635143 [61] WPIDS
DOC. NO. NON-CPI: N2000-471157
DOC. NO. CPI: C2000-191146
TITLE: Inkjet recording method of watermark embedded image on paper, involves discharging watermark ink on previously discharged usual colored ink on paper at identical pixel position slightly spaced apart.
DERWENT CLASS: G05 P75
PATENT ASSIGNEE(S): (CANO) CANON KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2000263913	A	20000926	(200061)*		16

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2000263913	A	JP 1999-69024	19990315

PRIORITY APPLN. INFO: JP 1999-69024 19990315
AN 2000-635143 [61] WPIDS
AB JP2000263913 A UPAB: 20001128
NOVELTY - The method involves discharging a watermark ink on the previously discharged usual colored ink on recording paper (8), at identical pixel position sightly spaced apart, for printing image. The watermark ink contains **fluorescent** colored component developed with invisible light or electromagnetism detectable magnetic component.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for serial type inkjet recording apparatus which includes a carriage (1) in which usual recording discharge head (15) and watermark recording discharge head (16) are arranged at front and back side, along conveying direction of recording paper. A main scanning motor reciprocates the carriage along main **scanning direction**, while a sub-**scanning** motor conveys the paper along subscanning direction. A watermark data production unit and an usual printing data production unit are provided to produce the watermark data and usual printing data, respectively. A watermark data extractor extracts out the produced watermark data and is supplied to watermark data switching unit where one of the **fluorescent** ink of **multiple** color is selected

based on priority of usual printing data and multicolor output of usual printing data production unit. The decimation treatment unit thins out and treats the extracted usual printing data and watermark printing data for complementing each equally and stores it in usual and watermark image data memories respectively. The decimation treated usual printing data and watermark printing data are applied to usual recording discharge head and watermark recording discharge head by a data output unit. A drive controller controls the drive of discharge heads at different periods such that the drive of usual recording discharge head is performed earlier while the drive of watermark recording discharge head is performed later.

USE - For inkjet recording of watermark embedded image on recording paper e.g. for currency by use of serial type inkjet printer.

ADVANTAGE - Arbitrary watermark information is simply recordable by the low cost on a recording paper without changing the tint of usual printing image by usual color ink. The interference of viewability of ordinary image by usual printing data is eliminated.

DESCRIPTION OF DRAWING(S) - The figure shows the conceptual diagram representing the configuration aspect of recording head for watermark printing on carriage.

Carriage 1

Watermark ink 8

Usual recording discharge head 15

Watermark recording discharge head 16

Dwg.2/11

L27 ANSWER 21 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 2001-074012 [09] WPIDS

CROSS REFERENCE: 2000-546302 [50]

DOC. NO. NON-CPI: N2001-056329

TITLE: Image forming apparatus has LED array which is moved to write write-in line on photosensitive drum, and its velocity along **sub-scanning direction** is more than that in main **scanning direction.**

DERWENT CLASS: P75 P84 S06 T04 W02

INVENTOR(S): SEKIYA, T; SHIRAISHI, M

PATENT ASSIGNEE(S): (CANO) CANON KK

COUNTRY COUNT: 2

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 2000211186	A	20000802	(200109)*		9
US 6563526	B1	20030513	(200335)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 2000211186	A	JP 1999-14873	19990122
US 6563526	B1	US 2000-488933	20000121

PRIORITY APPLN. INFO: JP 1999-14873 19990122; JP 1999-14872 19990122
AN 2001-074012 [09] WPIDS
CR 2000-546302 [50]
AB JP2000211186 A UPAB: 20030603
NOVELTY - An LED array head has **multiple** LED **chips** (211) having length equal to 1 divided by n times that of main pixel length. The **sub-scanning** repeating velocity of head when writing optical write-in line (100) on photosensitive drum (342), is incremented by n times when head is moved along main **scanning direction.**

DETAILED DESCRIPTION - When moving speed of head along **sub-scanning direction** of photosensitive drum falls in predetermined value, the repeating velocity of head along **sub-scanning direction** is reduced.

USE - E.g. printer using LED array.

ADVANTAGE - Write-in line written in a photosensitive drum is performed in a main scan full length. Fault compensation is eliminated, when moving speed of head along **sub-scanning direction** within predetermined value.

DESCRIPTION OF DRAWING(S) - The figure shows the model diagram of LED array **chip** and photosensitive drum.

Optical write-in line 100
LED **chips** 211
Photosensitive drum 342
Dwg.1/11

L27 ANSWER 22 OF 48 MEDLINE on STN DUPLICATE 5
ACCESSION NUMBER: 2001105069 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11131098
TITLE: Multiplex FISH and three-dimensional DNA imaging with near infrared femtosecond laser pulses.
AUTHOR: Konig K; Riemann I; Fischer P; Halbhuber K J
CORPORATE SOURCE: Institute of Anatomy II, Friedrich Schiller University Jena, Germany.. kkoe@mti-n.uni-jena.de
SOURCE: Histochemistry and cell biology, (2000 Oct) 114 (4) 337-45. Journal code: 9506663. ISSN: 0948-6143.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE) (VALIDATION STUDIES)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 200102
ENTRY DATE: Entered STN: 20010322
Last Updated on STN: 20010322
Entered Medline: 20010208
AB We report on a novel technology for multicolor gene and chromosome detection as well as for three-dimensional (3D) DNA **imaging** by multiphoton excitation of **multiple** FISH **fluorophores**

and DNA stains. Near infrared femtosecond laser pulses at 770 nm were used to simultaneously excite the visible fluorescence of a wide range of FISH fluorophores, such as FITC, DAC, Cy3, Cy5, Cy5.5, rhodamine, spectrum aqua, spectrum green, spectrum orange, Jenfluor, and Texas red as well as of DNA/chromosome stains, for example Hoechst 33342, DAPI, SYBR green, propidium iodide, ethidium homodimer, and Giemsa. In addition to the advantage of using only one excitation wavelength for a variety of fluorophores, multiphoton excitation provided the intrinsic possibility of 3D fluorescence imaging. The technology has been used in human genetics for the diagnosis of numerical chromosome aberrations and microdeletions. In particular, multicolor 3D images of the intranuclear localization of FISH-labeled chromosome territories in interphase nuclei of amniotic fluid cells have been obtained. Using the high light penetration depth at 770 nm, optical sectioning of Hoechst 33342-labeled DNA within living culture cells and within tissue of living tumor-bearing mice was performed.

L27 ANSWER 23 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:653531 HCAPLUS
DOCUMENT NUMBER: 129:271493
TITLE: Method for simultaneous detection of multiple fluorophores for in situ hybridization and multicolor chromosome painting and banding
INVENTOR(S): Garini, Yuval; Cabib, Dario; Buckwald, Robert A.; Ried, Thomas; Soenksen, Dirk G.
PATENT ASSIGNEE(S): Applied Spectral Imaging, USA
SOURCE: U.S., 58 pp., Cont.-in-part of U.S. Ser. No. 575,191.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5817462	A	19981006	US 1996-635820	19960422
EP 767361	A2	19970409	EP 1993-203737	19930722
EP 767361	A3	19970813		
EP 767361	B1	20000301		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
EP 957345	A2	19991117	EP 1999-111903	19930722
EP 957345	A3	20000503		
EP 957345	B1	20021113		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
EP 957346	A2	19991117	EP 1999-111904	19930722
EP 957346	A3	20000503		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
AT 189927	E	20000315	AT 1993-203737	19930722
ES 2144441	T3	20000616	ES 1993-203737	19930722
ES 2188065	T3	20030616	ES 1999-111903	19930722
US 5719024	A	19980217	US 1996-759342	19961202
EP 832417	A1	19980401	EP 1996-944834	19961210

EP 832417	B1	20030806			
R: DE, ES, FR, GB, IT					
JP 11500832	T2	19990119	JP 1996-522259	19961210	
JP 11503239	T2	19990323	JP 1997-522950	19961210	
JP 3474579	B2	20031208			
IL 121426	A1	20000229	IL 1996-121426	19961210	
DE 29624210	U1	20010628	DE 1996-29624210	19961210	
JP 3280035	B2	20020430	JP 1997-522259	19961210	
EP 1367384	A1	20031203	EP 2003-12481	19961210	
R: DE, ES, FR, GB, IT					
WO 9740191	A1	19971030	WO 1997-US6225	19970416	
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM					
RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG					
AU 9727305	A1	19971112	AU 1997-27305	19970416	
EP 896631	A1	19990217	EP 1997-921198	19970416	
EP 896631	B1	20030319			
R: DE, ES, FR, GB, IT					
JP 2000509977	T2	20000808	JP 1997-538153	19970416	
IL 125609	A1	20010111	IL 1997-125609	19970416	
US 5906919	A	19990525	US 1997-962845	19970418	
US 6066459	A	20000523	US 1998-100104	19980619	
GR 3033470	T3	20000929	GR 2000-401166	20000522	

PRIORITY APPLN. INFO.:	US 1992-107673	B2	19920818
	US 1995-392019	A2	19950225
	US 1995-571047	A2	19951212
	US 1995-575191	A2	19951220
	EP 1993-203737	A3	19930722
	EP 1999-111903	A	19930722
	US 1996-635820	A2	19960422
	US 1996-718831	B2	19960924
	EP 1996-944834	A	19961210
	WO 1996-US20022	W	19961210
	WO 1996-US20024	W	19961210
	WO 1997-US6225	W	19970416
	US 1997-844516	A3	19970418

AB A spectral **imaging** method for simultaneous detection of **multiple fluorophores** aimed at detecting and analyzing fluorescent in situ hybridizations employing numerous chromosome paints and/or loci specific probes each labeled with a different fluorophore or a combination of fluorophores for color karyotyping, and at multicolor chromosome banding, wherein each chromosome acquires a specifying banding pattern, which pattern is established using groups of chromosome fragments labeled with various fluorophore or combinations of fluorophores. This method results in extremely high sample throughput and allows anal. of a high number of differently labeled probes. Thus, spectral bio-imaging (a

combination of Fourier spectroscopy, CCD imaging, and optical microscopy enabling the measurement of definitive spectral data simultaneously at all points of a biol. sample) was used to visualize hybridization-based multicolor appearance of all 24 types of human chromosomes and to generate a color map of the human karyotype. The method was also applied to detection of chromosome translocations in breast cancer cells.

L27 ANSWER 24 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1999-056255 [05] WPIDS
DOC. NO. NON-CPI: N1999-042774
TITLE: Projection optical system used during LCD element manufacture - has optical image formation system with negative lens formed of **fluorspar**, for re-imaging intermediate image of wafer.
DERWENT CLASS: P81 P84 U11 U14
PATENT ASSIGNEE(S): (NIKR) NIKON CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 10308345	A	19981117	(199905)*		6

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 10308345	A	JP 1997-127927	19970430

PRIORITY APPLN. INFO: JP 1997-127927 19970430
AN 1999-056255 [05] WPIDS
AB JP 10308345 A UPAB: 19990203
The system includes a lens and a concave mirror. Image of patterns formed in reticle (R) of the mirror, is formed in a wafer (W). The reticle and the wafer are synchronously scanned with respect to a ratio, equivalent to a reduction **multiplying** factor. A semi-circular exposure area (A) has diameter (L) along **scanning direction.** A first image optical system with a concave mirror (MC) forms an intermediate image of the reticle on the exposure area. A plane mirror is arranged near the intermediate image formation area. A second image optical system has a negative lens (LCa) formed on **fluorspar.** The second image optical system performs re-imaging of intermediate image of wafer.

ADVANTAGE - Improves aperture rate corresponding to UV wavelength range. Improves resolving degree of optical system.
Dwg.1/3

L27 ANSWER 25 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1998-432633 [37] WPIDS
DOC. NO. NON-CPI: N1998-338009

TITLE: Solid state scanning type optical write-in device for printer - has controller which changes maximum opening time of optical shutter **chip** for each of three primary colours of light.
DERWENT CLASS: P75 T04
PATENT ASSIGNEE(S): (MIOC) MINOLTA CAMERA KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 10181097	A	19980707	(199837)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 10181097	A	JP 1996-341909	19961220

PRIORITY APPLN. INFO: JP 1996-341909 19961220
AN 1998-432633 [37] WPIDS
AB JP 10181097 A UPAB: 19980916
The device controls the ON and OFF operation of an optical shutter **chip** (30) arranged through a main **scanning direction** for each of the three primary colours of light. A controller varies the maximum opening time of the **chip** for every colour.

ADVANTAGE - Simplifies control of differentiation in **spectroscopy** characteristic for every colour. Does not reduce write-in velocity. Obtains high definition image since there is no concentration irregularity when in multi-gradation image.
Dwg.1/11

L27 ANSWER 26 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 6
ACCESSION NUMBER: 1998:599296 HCAPLUS
DOCUMENT NUMBER: 129:323065
TITLE: Simultaneous confocal lifetime **imaging** of **multiple fluorophores** using the intensity-modulated multiple-wavelength scanning (IMS) technique
AUTHOR(S): Carlsson, K.; Liljeborg, A.
CORPORATE SOURCE: Department of Biomedical and X-ray Physics, The Royal Institute of Technology, Stockholm, SE-100 44, Swed.
SOURCE: Journal of Microscopy (Oxford) (1998), 191(2), 119-127
CODEN: JMICAR; ISSN: 0022-2720
PUBLISHER: Blackwell Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors demonstrate the simultaneous recording of confocal lifetime **images** of **multiple fluorophores.** The confocal

microscope used combines intensity-modulated laser illumination, lock-in detection and spectral separation of the fluorescent light. A theor. study is presented that describes how the signal-to-noise ratio (SNR) depends on various factors such as modulation frequency, degree of modulation and number of detected photons. Theory predicts that, compared with ordinary intensity images, lifetime images will have a SNR i.e., at best, .apprx.4 times lower. Exptl. results are presented that confirm this prediction.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 27 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:718042 HCAPLUS
DOCUMENT NUMBER: 128:948
TITLE: Method for simultaneous detection of multiple fluorophores for in situ hybridization and chromosome analysis
INVENTOR(S): Garini, Yuval; Cabib, Dario; Buckwald, Robert A.; Soenksen, Dirk G.; Ried, Thomas
PATENT ASSIGNEE(S): Applied Spectral Imaging Ltd., Israel; Garini, Yuval; Cabib, Dario; Buckwald, Robert A.; Soenksen, Dirk G.; Ried, Thomas
SOURCE: PCT Int. Appl., 113 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 6

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9740191	A1	19971030	WO 1997-US6225	19970416
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG				
EP 767361	A2	19970409	EP 1993-203737	19930722
EP 767361	A3	19970813		
EP 767361	B1	20000301		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
EP 957345	A2	19991117	EP 1999-111903	19930722
EP 957345	A3	20000503		
EP 957345	B1	20021113		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
EP 957346	A2	19991117	EP 1999-111904	19930722
EP 957346	A3	20000503		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, NL, SE				
AT 189927	E	20000315	AT 1993-203737	19930722

ES 2144441	T3	20000616	ES 1993-203737	19930722
ES 2188065	T3	20030616	ES 1999-111903	19930722
US 5817462	A	19981006	US 1996-635820	19960422
DE 29624210	U1	20010628	DE 1996-29624210	19961210
AU 9727305	A1	19971112	AU 1997-27305	19970416
EP 896631	A1	19990217	EP 1997-921198	19970416
EP 896631	B1	20030319		
R: DE, ES, FR, GB, IT				
JP 2000509977	T2	20000808	JP 1997-538153	19970416
IL 125609	A1	20010111	IL 1997-125609	19970416

PRIORITY APPLN. INFO.:

US 1996-635820	A	19960422
US 1992-107673	B2	19920818
EP 1993-203737	A3	19930722
EP 1999-111903	A	19930722
US 1995-392019	A2	19950225
US 1995-571047	A2	19951212
US 1995-575191	A2	19951220
EP 1996-944834	A	19961210
WO 1997-US6225	W	19970416

AB A spectral **imaging** method for simultaneous detection of **multiple fluorophores** aimed at detecting and analyzing fluorescent in situ hybridizations employing numerous chromosome paints and/or loci specific probes each labeled with a different fluorophore or a combination of fluorophores for color karyotyping, and at multicolor chromosome banding, wherein each chromosome acquires a specifying banding pattern, which pattern is established using groups of chromosome fragments labeled with various fluorophores or combinations of fluorophores. DAPI (2-[4-(aminoiminomethyl)phenyl]-1H-Indole-6-carboximidamide) was used a chromosome banding dye.

L27 ANSWER 28 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:794011 HCAPLUS
DOCUMENT NUMBER: 128:71629
TITLE: DNA sequencer with fluorescence optical system
INVENTOR(S): Fujiwake, Shuji
PATENT ASSIGNEE(S): Shimadzu Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09318600	A2	19971212	JP 1996-160859	19960531

PRIORITY APPLN. INFO.: JP 1996-160859 19960531

AB In the DNA sequencer using slab gel electrophoresis and fluorescence detection, a system for fluorescence detection comprises (1) an optical system which makes fluorescent light from a DNA fragment on a straight line of a gel upon irradiation parallel, (2) **multiple** spectral

filters for **fluorescence** light, which are arranged in the path of the parallel light in parallel with the migration **direction** and have transmission properties different with each other, (3) an imaging system which individually images the spectrally-separated **multiple fluorescent images**, and (4) a two-dimensional optical detector for simultaneous detection of the **fluorescent images.** The spectrally-separated fluorescence light beams are reflected by mirrors at different angles, passed through an imaging lens at the different position, and imaged on the two-dimensional detector. The sequencer requires no scanning system and is free from reduction in fluorescent light intensity since it uses no prism.

L27 ANSWER 29 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:486084 HCAPLUS
DOCUMENT NUMBER: 125:162728
TITLE: Electrophoresis analyzer
INVENTOR(S): Brumley, Robert L.; Luckey, John A.
PATENT ASSIGNEE(S): Genesys Technologies, Inc., USA
SOURCE: U.S., 15 pp., Cont.-in-part of U.S. Ser. No. 384,240,abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5538613	A	19960723	US 1995-545219	19951019

PRIORITY APPLN. INFO.: US 1993-143480 19931026
US 1995-384240 19950206

AB An apparatus for detecting fluorescently-labeled mols. moving in an electrophoretic separation medium. The apparatus utilizes a **scanning** detection system in which **multiple fluorophores** are efficiently and simultaneously detected using dichroic mirrors to allow simultaneous detection of fluorescently-labeled mols. in ultrathin gels labeled with several fluorophores and to permit operation at speeds ten times faster than prior art gel sepns. The apparatus also utilizes a detection system where lightweight collection optics are in motion while detection optics are fixed in a remote location, thereby allowing exceptionally high-speed scanning.

L27 ANSWER 30 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1996-473431 [47] WPIDS
DOC. NO. NON-CPI: N1996-399305
TITLE: Image reading appts. e.g. for film or overhead projector - in which part of light beam originating from **fluorescent** lamp, is condensed onto surface of document.
DERWENT CLASS: P81 P82 S06 W02 W04 X26
INVENTOR(S): MATSUOKA, K; SASAKI, K; SUGIYAMA, M

PATENT ASSIGNEE(S): (CANO) CANON KK
COUNTRY COUNT: 2
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 08240864	A	19960917	(199647)*		6
US 6118555	A	20000912	(200046)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 08240864	A	JP 1995-68830	19950302
US 6118555	A	US 1996-609058	19960301

PRIORITY APPLN. INFO: JP 1995-68830 19950302; JP 1996-46645 19960207; JP 1996-46646 19960207

AN 1996-473431 [47] WPIDS

AB JP 08240864 A UPAB: 19961124

The appts includes an image formation optical system (2) which obtains image information of the document which is illuminated by light from a light source (1) which is a **fluorescent** lamp. **Multiple** pixels are formed on the surface of reading part, arranged along the main **scanning direction.**

The document and the image reading part are relatively moved, along scanning and sub-scanning axes. These axes are mutually perpendicular. A pair of the light beam, from the **fluorescent** lamp is condensed onto the surface of the document.

ADVANTAGE - Enables image information reading process at high speed. Simplifies appts composition. Excels in lighting efficiency.

Dwg.1/7

L27 ANSWER 31 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1996-347167 [35] WPIDS
DOC. NO. NON-CPI: N1996-292458
TITLE: Plasma display panel - has primary cell and display discharge cell formed between first and second insulated substrates.
DERWENT CLASS: P85 V05
PATENT ASSIGNEE(S): (NIDE) NEC CORP
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 08162026	A	19960621	(199635)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 08162026	A	JP 1994-301781	19941206

PRIORITY APPLN. INFO: JP 1994-301781 19941206
AN 1996-347167 [35] WPIDS
AB JP 08162026 A UPAB: 19960905
The plasma display panel has **multiple** scanning electrode (13) and a pair of maintenance electrodes (14) which are formed in a first insulated substrate (11). Between the scanning electrodes, a shading mask (15) and a trace electrode (16) are formed. One side of each of the scanning electrode, the maintenance electrode, the shading mask and the track electrode are covered by a transparent glass film (17).

A data electrode (18) is formed in a second insulated substrate (12), at an orthogonal **direction** to the **scanning** electrode and the maintenance electrode. The first substrate and the second substrate are arranged opposite to each other, with a partition (21) in between. The data electrode is covered by a reflective layer (19) and a **fluorescent** layer (20). A primary cell (23) and a display discharge cell (22) are formed between the first and the second insulated substrates.

ADVANTAGE - Prevents reduction of contrast. Controls emission of light. Obtains sufficient priming grain density.
Dwg.1/6

L27 ANSWER 32 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1996-273879 [28] WPIDS
DOC. NO. NON-CPI: N1996-230271
TITLE: Radiation type image reading device - detects end of **fluorescent** sheet material when quantity of light reflected from material is small, through condensing guide using photo **multiplier.**
DERWENT CLASS: P82 S05 W02
PATENT ASSIGNEE(S): (FUJF) FUJI PHOTO FILM CO LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 08114876	A	19960507	(199628)*	15	

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 08114876	A	JP 1994-250908	19941017

PRIORITY APPLN. INFO: JP 1994-250908 19941017

AN 1996-273879 [28] WPIDS
AB JP 08114876 A UPAB: 19960719
The device consists of a light source (10) that radiates an excitation light beam (11) on a **fluorescent** material sheet (1) which stores a recorded image. The excitation light is irradiated in a two dimensional space on the sheet by moving the sheet in a sub-**scanning direction** relatively to the light. A pair of photo **multipliers** (15a, 15b) receives the light reflected from the sheet material. The photo **multiplier** has a pair of excitation light cut filters (20a, 20b) that prevents transmission of light whose quantity is bigger than a minimum value which is set beforehand.

When the **fluorescent** material is conveyed, the end of the material is detected by the photo **multiplier.** The end of **fluorescent** material is judged when the quantity of light reflected from the material through a condensing guide (14a) is small. The end of the material sheet is detected by an end detected signal (Q1) output from the photo **multiplier.**

ADVANTAGE - Obtains good reproduction image with clarity. Reduces device cost by simplifying device composition.
Dwg.1/16

L27 ANSWER 33 OF 48 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 96302939 EMBASE
DOCUMENT NUMBER: 1996302939
TITLE: Three-colour confocal microscopy with improved colocalization capability and cross-talk suppression.
AUTHOR: Patwardhan A.; Manders E.M.M.
CORPORATE SOURCE: Physics IV, Royal Institute of Technology,S-100 44 Stockholm, Sweden
SOURCE: Bioimaging, (1996) 4/1 (17-24).
ISSN: 0966-9051 CODEN: BOIMEL
COUNTRY: United Kingdom
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 001 Anatomy, Anthropology, Embryology and Histology
005 General Pathology and Pathological Anatomy
027 Biophysics, Bioengineering and Medical Instrumentation
LANGUAGE: English
SUMMARY LANGUAGE: English
AB A confocal microscope set-up has been modified so that three different fluorescent markers can be studied. The three fluorophores (FITC, Texas Red and Cy5) are detected at the same time, i.e. simultaneous scanning is employed. We have shown that simultaneous scanning optimizes the precise overlay of the three colour components of an image (in contrast with sequential scanning where shifts between the colour components may occur). To suppress optical cross-talk between the three **fluorophores**, intensity-modulated **multiple**-beam **scanning**, IMS, has been employed. Cross-talk between the fluorescence signals has been measured. Results show that cross-talk is virtually eliminated by using the IMS technique. Measurements have been performed on a triple-stained

immunofluorescence specimen in order to show the applicability of the technique in biological research. Results are presented that show that the technique presented here improves the accuracy of colocalization, position and intensity measurements for studies on stationary as well as on dynamic structures.

L27 ANSWER 34 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1995:641040 HCAPLUS
DOCUMENT NUMBER: 123:47063
TITLE: Apparatus for quantitative **imaging** of **multiple fluorophores** using dual detectors
INVENTOR(S): Aslund, Nils R. D.; Carlsson, Kjell S.
PATENT ASSIGNEE(S): Swed.
SOURCE: U.S., 11 pp. Cont.-in-part of U.S. 5,294,799.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5418371	A	19950523	US 1994-189190	19940131
US 5294799	A	19940315	US 1993-11881	19930201
WO 9418547	A1	19940818	WO 1994-IB19	19940201
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 681695	A1	19951115	EP 1994-906355	19940201
EP 681695	B1	19970502		
R: AT, CH, DE, DK, FR, GB, IT, LI, NL, SE				
JP 08506419	T2	19960709	JP 1994-517853	19940201
AT 152519	E	19970515	AT 1994-906355	19940201

PRIORITY APPLN. INFO.: US 1993-11881 19930201
US 1994-189190 19940131
WO 1994-IB19 19940201

AB A quant. fluorometer for multiple fluorophores having dual time-modulated beams of excitation light. Each beam is synchronized with a sep. detector and lock-in amplifier. The fluorophores are simultaneously excited and the combined fluorescent emission is resolved into components corresponding to each fluorophore. Confocal scanning means are used to excite and detect fluorescent emission from locations throughout a volume The location specific output of each amplifier is stored in a computer which resolves the emission into the components corresponding to each fluorophore. The location specific data may be further processed or visually displayed. Multiple amplifiers for each detector channel allow phase discrimination in each channel so that prompt and delayed fluorescence may be measured, allowing use of multiple fluorophores in each detector channel.

L27 ANSWER 35 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 1995-223907 [29] WPIDS
DOC. NO. NON-CPI: N1995-175538
TITLE: Fluorescence detection appts - employs fibre-optic collector, positioned adjacent to scanning plane of excitation beam, with light collecting surface oriented to reject back-scattered excitation light from incident surface of sample support.
DERWENT CLASS: S03
INVENTOR(S): JOHNSTON, R F; LIANG, B C; LODER, R T; VAN, GELDER E
PATENT ASSIGNEE(S): (MOLE-N) MOLECULAR DYNAMICS
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
US 5424841	A	19950613	(199529)*		7

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
US 5424841	A	US 1993-69150	19930528

PRIORITY APPLN. INFO: US 1993-69150 19930528
AN 1995-223907 [29] WPIDS
AB US 5424841 A UPAB: 19950727
The scanning plane of the excitation beam is off normal relative to the incident surface of the sample support and the light collecting surface is located within the area defined by the resulting acute angle of incidence. The light collecting surface is angled away from the location at which the incident excitation beam intersects the surface of the sample support so that back-scattered excitation light does not enter the optical fibres. Long-pass interference filters, selected to reject the excitation wavelength, are located at the input and output surfaces of the fibre=optic light collector to further reduce background excitation light.

Multiple fluorophores are discriminated by sequentially **scanning** the sample with a different interchangeable narrow bandpass filter for each fluorophore. Internal fluorescence standards in the sample are used to determine filter efficiencies for each label in each filter image and the quantity of each fluorophore is computed by linear analysis.

USE/ADVANTAGE - Automated DNA sequencing and variety of immunoassays. Increased detector sensitivity allows linear quantitation of multiple fluorophores in the femto-mole range. The orientation of the light collector results in a four to five-fold decrease in excitation-light background without attenuation of the fluorescence emitted by the sample. Dwg.1/3

L27 ANSWER 36 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1996-024123 [03] WPIDS

DOC. NO. NON-CPI: N1996-020260
TITLE: Radiation image converter for X-ray analysis - has second correcting data calculation unit to obtain correction data for non-uniformity of image data resulting from uneven reflection from **fluorescent** material.
DERWENT CLASS: P82 S05 T01 W02
PATENT ASSIGNEE(S): (FUIT) FUJITSU LTD
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 07295121	A	19951110	(199603)*		11

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 07295121	A	JP 1994-91842	19940428

PRIORITY APPLN. INFO: JP 1994-91842 19940428
AN 1996-024123 [03] WPIDS
AB JP 07295121 A UPAB: 19960129
The convertor consists of a polygonal rotating mirror. A radiation image scans the recorded **fluorescent** material top along the preset main **scanning direction.** The polygonal rotation mirror which has **multiple** reflecting surfaces reflect the excitation laser beam. The **fluorescent** material is also relatively moved along subscanning direction which intersects the main **scanning direction**, by first correction unit.

The light emitted by each point on the **fluorescent** material is read by photoelectric material and image data is obtained. The first correction data is obtained by averaging image data along subscanning direction. The process is repeated by recurring images. Thus, non-uniformity of image data resulting from **fluorescent** material is corrected using a second correction unit.

ADVANTAGE - Obtains good radiation image.
Dwg.1/6

L27 ANSWER 37 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1995-143319 [19] WPIDS
DOC. NO. NON-CPI: N1995-112973
TITLE: Photographic film image processor - uses film holder **multiple** frame where one sheet of film can be illuminated by **fluorescent** tubes in platen.
DERWENT CLASS: S06 W02
PATENT ASSIGNEE(S): (RICO) RICOH KK
COUNTRY COUNT: 1
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 07066934	A	19950310	(199519)*		23
JP 3317751	B2	20020826	(200263)		22

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 07066934	A	JP 1993-207871	19930823
JP 3317751	B2	JP 1993-207871	19930823

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 3317751	B2 Previous Publ.	JP 07066934

PRIORITY APPLN. INFO: JP 1993-207871 19930823
AN 1995-143319 [19] WPIDS
AB JP 07066934 A UPAB: 19950524
The film image processor has a platen (300) which presses an original document on the stand. The reader (502) scans the original document in a main **scanning** and subscanning **direction** and sends it to the output. The film holder has a **multiple** frame where one sheet of film can be attached even if the platen pushes.

The light source illuminates the film held by the film holder for reading the light. The frame of the film is then specified and read. The control enables the expansion and output of the image.

ADVANTAGE - Makes miniaturisation possible, prevents focus fuzziness and reduces power consumption.
Dwg.1/27

L27 ANSWER 38 OF 48 MEDLINE on STN DUPLICATE 7
ACCESSION NUMBER: 95332698 MEDLINE
DOCUMENT NUMBER: PubMed ID: 7608524
TITLE: Spectra and fluorescence lifetimes of lissamine rhodamine, tetramethylrhodamine isothiocyanate, texas red, and cyanine 3.18 fluorophores: influences of some environmental factors recorded with a confocal laser scanning microscope.
AUTHOR: Brismar H; Trepte O; Ulfhake B
CORPORATE SOURCE: Royal Institute of Technology, Karolinska Institutet, Stockholm, Sweden.
SOURCE: journal of histochemistry and cytochemistry : official journal of the Histochemistry Society, (1995 Jul) 43 (7) 699-707.
Journal code: 9815334. ISSN: 0022-1554.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals

ENTRY MONTH: 199508
ENTRY DATE: Entered STN: 19950828
Last Updated on STN: 19950828
Entered Medline: 19950815

AB We report on the spectra and fluorescence lifetimes of four commonly used fluorophores: lissamine rhodamine (LRSC); tetramethyl rhodamine isothiocyanate (TRITC); Texas Red; and cyanine 3.18 (Cy-3). Fluorescence lifetime recordings revealed that these spectrally overlapping fluorophores can be individually detected by their lifetimes, indicating that at least four fluorophores can be individually identified in discrete tissue domains by confocal microscopy. A further advantage of lifetime recordings is that fluorophores that emit light within the same wavelength band can be used and chromatic aberrations are therefore circumvented, thereby improving the spatial accuracy in **imaging** of **multiple fluorophores.** Low and high pH, respectively, tended to influence fluorophore emission spectra and fluorescence lifetime. IgG conjugation of the fluorophores tended to shift the spectra towards longer wavelengths and to change the fluorescence lifetimes. The IgG-conjugated form of the fluorophores may, when applied to tissue specimens, change the emission spectrum and lifetime. In addition, different tissue embedding procedures may influence fluorescence lifetime. These observations emphasize the importance of spectral and lifetime characterization of fluorescent probes within the chemical context in which they will be used experimentally. Changes in spectra and fluorescence lifetimes may be a useful tool to gain information about the chemical environment of the fluorophores.

L27 ANSWER 39 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN DUPLICATE 8
ACCESSION NUMBER: 1994:337984 HCAPLUS
DOCUMENT NUMBER: 120:337984
TITLE: Apparatus for quantitative **imaging** of **multiple fluorophores**
INVENTOR(S): Aslund, Nils R. D.; Carlsson, Kjell S.
PATENT ASSIGNEE(S): Swed.
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5294799	A	19940315	US 1993-11881	19930201
US 5418371	A	19950523	US 1994-189190	19940131
WO 9418547	A1	19940818	WO 1994-IB19	19940201
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 681695	A1	19951115	EP 1994-906355	19940201
EP 681695	B1	19970502		
R: AT, CH, DE, DK, FR, GB, IT, LI, NL, SE				

JP 08506419	T2	19960709	JP 1994-517853	19940201
AT 152519	E	19970515	AT 1994-906355	19940201

PRIORITY APPLN. INFO.:

US 1993-11881	19930201
US 1994-189190	19940131
WO 1994-IB19	19940201

AB A quant. fluorometer for multiple fluorophores has a sep. time-modulated beam of excitation light for each fluorescent target. Each beam is synchronized with a sep. lock-in amplifier. The fluorophores are simultaneously excited and the combined fluorescent emission is resolved into components corresponding to each fluorophore. Confocal scanning means are used to excite and detect fluorescent emission from locations throughout a volume The location-specific output of each amplifier is stored in a computer which resolves the emission into the components corresponding to each fluorophore. The location-specific data may be further processed or visually displayed.

L27 ANSWER 40 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1994:691554 HCAPLUS
DOCUMENT NUMBER: 121:291554
TITLE: Apparatus for quantitative **imaging** of **multiple fluorophores**
INVENTOR(S): Aslund, Nils R. D.; Carlsson, Kjell S.
PATENT ASSIGNEE(S): Swed.
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9418547	A1	19940818	WO 1994-IB19	19940201
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 5294799	A	19940315	US 1993-11881	19930201
US 5418371	A	19950523	US 1994-189190	19940131
EP 681695	A1	19951115	EP 1994-906355	19940201
EP 681695	B1	19970502		
R: AT, CH, DE, DK, FR, GB, IT, LI, NL, SE				
JP 08506419	T2	19960709	JP 1994-517853	19940201

PRIORITY APPLN. INFO.:

US 1993-11881	19930201
US 1994-189190	19940131
WO 1994-IB19	19940201

AB A quant. fluorometer for multiple fluorophores has a sep. time-modulated beam of excitation light for each fluorescent target. Each beam is synchronized with $\geq$1 detectors and sep. lock-in amplifiers. The fluorophores are simultaneously excited and the combined fluorescent emission is resolved into components corresponding to each fluorophore. Confocal scanning means are used to excite and detect fluorescent emission from locations throughout a volume The location specific output of each

amplifier is stored in a computer which resolves the emission into the components corresponding to each fluorophore. The location specific data may be further processed or visually displayed to provide simultaneously fluorescence lifetime images of two fluorophores with this frequency domain method. Multiple amplifiers for each detector channel allow phase discrimination in each channel so that prompt and delayed fluorescence may be measured, allowing use of multiple fluorophores in each detector channel.

L27 ANSWER 41 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1994-093608 [12] WPIDS
DOC. NO. NON-CPI: N1994-073425
DOC. NO. CPI: C1994-042885
TITLE: Scanner for an X-ray image stored on phosphorescent plate - having controllable system to ensure constant signal intensity from image regions of varying density.
DERWENT CLASS: K08 P31 P82 S03 S05 W02
INVENTOR(S): NAMIKI, F
PATENT ASSIGNEE(S): (FUIT) FUJITSU LTD
COUNTRY COUNT: 3
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 4329691	A1	19940317	(199412)*		27
JP 06078908	A	19940322	(199416)		13
US 5404024	A	19950404	(199519)		27

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 4329691	A1	DE 1993-4329691	19930902
JP 06078908	A	JP 1992-235988	19920903
US 5404024	A	US 1993-111886	19930826

PRIORITY APPLN. INFO: JP 1992-235988 19920903
AN 1994-093608 [12] WPIDS
AB DE 4329691 A UPAB: 19940510
Appts. is claimed for obtaining a reproducible image from an X-ray image stored on an improved phosphorescent **fluorescent** material plate (3.1). This is achieved by scanning the image (3.1) with an exciting light beam (3.2) along the main scanning axis (X). This causes the production of photo electrons (3.3) which are then collected in a set of independent photo-**multipliers** (4.7) arranged in a line behind a collector (4). The intensity of the electrons collected is dependent on the density of the original image. The sensitivity of the photomultiplier tubes can be adjusted to obtain a better image. The final electronically stored image can be further improved and manipulated.

Pref. the scanner device has an adder for combining the signals from

the photomultiplier fibres.

USE/ADVANTAGE - The appts. is intended primarily for medical use. The system permits one radiograph to be taken where previously several might have been needed, due to different absorption of the X-rays for example, intestinal and lung regions. The possibility of adjusting the photomultiplier tubes permits this.

Dwg.6/23

ABEQ US 5404024 A UPAB: 19950524

The radiation image reading appts. comprises: a main scanner for repeatedly scanning an accelerated phosphorescence **fluorescent** material object on which a radiation image of a subject is accumulated and stored by using an excitation beam in a main **scanning direction**, a sub-**scanning** device for moving the accelerated object of the excitation beam in a sub-**scanning direction**; a photoelectric converter for receiving accelerated phosphorescence **fluorescence** light emitter from all scanning points in response to the excitation beam and obtaining image signals which carry the radiation image., comprising photomultipliers arranged along the main **scanning direction** and a control section which independently controls respective sensitivities of photomultipliers by controlling voltages applied to the photomultipliers.

ADVANTAGE - Image signals are obtd. with radiation image information distributed in a wide range of radiation intensity displayed in an optimal density (brightness) without deterioration of the contrast resolution.

Dwg.7/23

L27 ANSWER 42 OF 48 HCAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1994:647228 HCAPLUS

DOCUMENT NUMBER: 121:247228

TITLE: Genetic data processing: innovative methods for data processing and interpretation in automatic molecular DNA analysis

AUTHOR(S): Vom Stein, Joerg

CORPORATE SOURCE: Perkin Elmer-Applied Biosystems GmbH, Weiterstadt, D-64331, Germany

SOURCE: BioTec (Marktheidenfeld, Germany) (1994), 6(2), 36,38,40-1
CODEN: BWGEE9; ISSN: 0937-2725

DOCUMENT TYPE: Journal; General Review

LANGUAGE: German

AB This review with 14 refs. discusses mol. DNA anal. with **multiple fluorophores** and laser **scanning** technol. and the specially developed hard- and software for managing and evaluating the data from automated DNA sequencing and DNA fragment anal.

L27 ANSWER 43 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN

ACCESSION NUMBER: 1993-409058 [51] WPIDS

DOC. NO. NON-CPI: N1995-140705

TITLE: **Scanning probe microscope** for sample observation - **scans** sample in **forward** and reverse directions, and corrects

image signal when corresp. detected tunnel current signals differ.

DERWENT CLASS: S02 S03 V05

INVENTOR(S): HATANAKA, K; KAWADE, H; KAWAGISHI, H; KISHI, E; MIYAMOTO, M; SAKAI, K; SATO, Y; TAKIMOTO, K

PATENT ASSIGNEE(S): (CANO) CANON KK

COUNTRY COUNT: 2

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
JP 05306926	A	19931119	(199351)*		10
US 5414260	A	19950509	(199524)B		15
JP 2966189	B2	19991025	(199950)		10

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
JP 05306926	A	JP 1992-112825	19920501
US 5414260	A	US 1993-54133	19930430
JP 2966189	B2	JP 1992-112825	19920501

FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 2966189	B2 Previous Publ.	JP 05306926

PRIORITY APPLN. INFO: JP 1992-112825 19920501

AN 1993-409058 [51] WPIDS

AB US 5414260 A UPAB: 19950626 ABEQ treated as Basic

The **scanning probe microscope** has the same portion of the sample surface **scanned forward** and backward using a probe. A signal corresp. to a structure of the sample is detected from the probe during a period in which the probe scans the surface of the sample forward. A second signal corresp. to the sample structure is detected from the probe during a period in which the probe scans the surface of the sample backward.

When there is a difference between at least part of the two signals, that part of one of the signals is replaced by a part of the other signal to generate a corrected signal. An image of the sample is formed using the corrected signal. Pref. a voltage is applied between the probe and the sample, and the signal detector includes a current detection circuit for a tunnel current through the probe.

ADVANTAGE - Accurate high speed imaging.

Dwg.5,6/9

AB JP 05306926 A UPAB: 19991110

The **scanning probe microscope** has the same portion of the sample surface **scanned forward** and backward using a probe. A signal corresp. to a structure of the sample is

detected from the probe during a period in which the probe scans the surface of the sample forward. A second signal corresp. to the sample structure is detected from the probe during a period in which the probe scans the surface of the sample backward.

When there is a difference between at least part of the two signals, that part of one of the signals is replaced by a part of the other signal to generate a corrected signal. An image of the sample is formed using the corrected signal. Pref. a voltage is applied between the probe and the sample, and the signal detector includes a current detection circuit for a tunnel current through the probe.

ADVANTAGE - Accurate high speed imaging.

Dwg.1/8

L27 ANSWER 44 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1992-260822 [32] WPIDS
DOC. NO. NON-CPI: N1992-199433
TITLE: **Fluorescent image** densitometer for flying spot system - uses spectroscope to irradiate measuring plate with light with measurement of **fluorescence** from excitation portion used to control drive of slotted disc in spectroscope.
DERWENT CLASS: S03
INVENTOR(S): ARAYA, K; SINYA, K
PATENT ASSIGNEE(S): (SHMA) SHIMADZU SEISAKUSHO KK; (SHMA) SHIMADZU CORP
COUNTRY COUNT: 5
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 497372	A1	19920805	(199232)*	EN	9
R: DE FR GB					
CN 1064545	A	19920916	(199321)		
US 5243401	A	19930907	(199337)		9
EP 497372	B1	19960417	(199620)	EN	10
R: DE FR GB					
DE 69209860	E	19960523	(199626)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 497372	A1	EP 1992-101626	19920131
CN 1064545	A	CN 1992-100398	19920120
US 5243401	A	US 1992-827219	19920130
EP 497372	B1	EP 1992-101626	19920131
DE 69209860	E	DE 1992-609860	19920131
		EP 1992-101626	19920131

FILING DETAILS:

PATENT NO	KIND	PATENT NO

DE 69209860 E Based on EP 497372

PRIORITY APPLN. INFO: JP 1991-32508 19910131
AN 1992-260822 [32] WPIDS
AB EP 497372 A UPAB: 19931006
The densitometer has a spectroscope (18) which irradiates light on to a measuring plate (34) via a concave mirror (30) and a plane mirror (32) with a crystal window plate (34) arranged as a half mirror between the plane mirror and the plate. Light extracted by this half mirror is monitored by a photoelectron **multiplication** tube (38). A **fluorescence** photoelectron **multiplication** tube (42) with a filter (40) transmits **fluorescence** to shield excitation light so the excitation light is incident upon the measuring plate with the **fluorescence** from the excitation portion being measured. The intensity of transmission light is measured on the back surface of the plate by a transmission photoelectron **multiplication** tube (44).

The output from the **fluorescence** detection tube is converted to a voltage in an I-V converter (46) digitised in an AD converter (4d) processed in a CPU (50) to control the driving circuit of the stepping motor (26) of the slotted disc (24) of the spectroscope. The spectroscope uses a tungsten halogen lamp (10) and a heavy hydrogen lamp (12) selected by a switching mirror (14) to provide excitation light.

ADVANTAGE - Corrects locality in realising **fluorescent** mapping densito-metry of flying spot system.
1/7

ABEQ US 5243401 A UPAB: 19931123
The two-dimensional **fluorescent** densitometry comprises an excitation optical system for scanning a measuring plate with an excitation light beam. A **fluorescence** detection system detects a **fluorescence** from the measuring plate. A correction table stores **fluorescent** data together with positional information in a **scanning direction** on the measuring plate.

An arithmetic section divides the **fluorescence** detection data by **fluorescent** data at the same position in the **scanning direction** on the measuring plate stored in the correction table.

USE - For measuring specimen plate having specimen spot e.g phospholipide two-dimensionally developed and **fluorescent** labelled on TLC plate.
21
Dwg.7/7

ABEQ EP 497372 B UPAB: 19960520
A **fluorescent image** densitometer of flying spot system comprising an excitation optical system for scanning and irradiating a measuring plate (34) with an excitation light beam; a **fluorescence** detection system for detecting a **fluorescence** from an excitation light irradiation position of the measuring plate; characterised by a correction table (54) for storing **fluorescent** data, measured with a plate uniformly applied with a **fluorescent** agent at least within the range of excitation light scanning, said plate being mounted as

the measuring plate (34), together with information of a position in a **scanning direction** on the measuring plate (34); and an arithmetic section (56) for dividing **fluorescence** detection data measured with a specimen plate mounted as the measuring plate (34) by **fluorescent** data at the same position in the **scanning direction** on the measuring plate stored in said correction table. Dwg.1/7

L27 ANSWER 45 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1991-186911 [26] WPIDS
DOC. NO. NON-CPI: N1991-143275
TITLE: Panel type cathode ray tube with support walls - has electron beam between front and back panels passed between control and deflecting electrodes orthogonally to panels.
DERWENT CLASS: V05
INVENTOR(S): INOUE, J; NAKAYAMA, A; OHOSHI, T; YAMAGUCHI, M
PATENT ASSIGNEE(S): (SONY) SONY CORP
COUNTRY COUNT: 5
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 434054	A	19910626	(199126)*		
R: DE FR GB					
JP 03192637	A	19910822	(199140)		
JP 03192638	A	19910822	(199140)		
US 5220240	A	19930615	(199325)		19
EP 434054	B1	19950809	(199536)	EN	21
R: DE FR GB					
DE 69021523	E	19950914	(199542)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 434054	A	EP 1990-124940	19901220
JP 03192637	A	JP 1989-331593	19891221
JP 03192638	A	JP 1989-331594	19891221
US 5220240	A	US 1990-631148	19901220
EP 434054	B1	EP 1990-124940	19901220
DE 69021523	E	DE 1990-621523	19901220
		EP 1990-124940	19901220

FILING DETAILS:

PATENT NO	KIND		PATENT NO
DE 69021523	E	Based on	EP 434054

PRIORITY APPLN. INFO: JP 1989-331593 19891221; JP

1989-331594 19891221

AN 1991-186911 [26] WPIDS

AB EP 434054 A UPAB: 19930928

An electron beam emitted by a gun (10) is deflected onto a screen (2) on a front panel (IF) of the tube by parallel deflecting electrodes (3a) on a rear panel (1B) of the tube. The beam is controlled by control electrodes (7) between the panels. The electron beam enters the space between the control electrodes and the deflecting electrodes orthogonal to the panels with a band like or linear section along the longitudinal direction of the parallel electrodes.

Support walls maintain the distance between the front and back panels and lie in the vertical **scanning direction** between the back panel (1B) and the electrodes (7) so as not to obstruct the electron beam.

ADVANTAGE - Minimal non-uniformity of brightness and good mechanical strength for large dimension screen (e.g. 40 inch screen).

3/15

ABEQ US 5220240 A UPAB: 19931116

The planar display apparatus has a **fluorescent** screen formed on the inner surface of a front panel in a planar tube body. An electron gun is disposed at a position deviated in a vertical **scanning direction** from a region opposite the **fluorescent** screen, and a vertical deflecting electrode composed of **multiple** parallel electrodes is disposed at an opposite portion relative to the **fluorescent** screen on the side of a back panel opposed to the front panel of the planar tube body.

In a space between the vertical deflection electrode and the **fluorescent** screen, there is an electrode structure with at least an electron lens scanning electrode composed of **multiple** parallel electrodes, a splitting electrode for splitting an electron beam from the electron gun into **multiple** beams, a modulating electrode and horizontal deflection electrodes.

ADVANTAGE - Maintains display image quality and brightness uniformity with increased screen area; provides mechanical strength against atmospheric pressure.

Dwg.5/15

ABEQ EP 434054 B UPAB: 19950918

A planar display apparatus comprising: a planar tube body (1) with a **fluorescent** screen (2) formed on the inner surface of a front panel (1F) thereof; an electron gun (10) disposed at a position deviated in a vertical direction from a region opposite to said **fluorescent** screen; a vertical deflecting electrode means (3) being composed of a plurality of parallel electrodes (3a) each of which extending in a horizontal **scanning direction** and disposed in a region opposite to said **fluorescent** screen (2) and on the inner surface of a back panel (1B) opposed to the front panel (1F) of said planar tube body (1); an electrode structure (7) disposed in said region opposite to said screen between said vertical deflecting electrode means (3) and said **fluorescent** screen (2), and having at least an electron lens scanning electrode (23) composed of a plurality of parallel electrodes (23a) extending in said horizontal **scanning direction**,

a splitting electrode (4) for splitting an electron beam from said electron gun (10) into a plurality of beams, a modulating electrode (5), and a horizontal deflecting electrode (6); support walls (8) interposed between said electrode structure (7) and said back panel (1B) for pressing said electrode structure (7) toward said front panel (1F) to thereby retain the space between said front and back panels, said support wall (8) being so formed that plate surfaces thereof extend in the vertical **scanning direction** orthogonally to said front and back panels, (1F,1B) and said support walls being formed of a material having an electrical resistance such that the potential difference between said vertical deflecting electrode means (3) and said electrode structure (7) is so distributed as to become gradually uniform along th distance (h) between said vertical deflecting electrode means (3) and said electrode structure (7); wherein said electron gun has means for emitting the electron beam (10) into said region opposite to said screen and between said electrode structure (7) and said vertical deflecting electrode means (3) substantially parallel to said front and back panels (1F,1B) the sectional shape of the beam being substantially band-like or linear, width of said beam extending in said horizontal **scanning direction.**
Dwg.1,2/14

L27 ANSWER 46 OF 48 MEDLINE on STN DUPLICATE 9
ACCESSION NUMBER: 90167823 MEDLINE
DOCUMENT NUMBER: PubMed ID: 2696599
TITLE: Correlated distribution of actin, myosin, and microtubules at the leading edge of migrating Swiss 3T3 fibroblasts.
AUTHOR: Conrad P A; Nederlof M A; Herman I M; Taylor D L
CORPORATE SOURCE: Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA 15213.
CONTRACT NUMBER: GM34639 (NIGMS)
SOURCE: Cell motility and the cytoskeleton, (1989) 14 (4) 527-43. Journal code: 8605339. ISSN: 0886-1544.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199004
ENTRY DATE: Entered STN: 19900601
Last Updated on STN: 19970203
Entered Medline: 19900404

AB The formation of lamellipodia in migrating cells involves dynamic processes that occur in a cyclic manner as the leading edge of a cell slowly advances. We used video-enhanced contrast microscopy (VEC) to monitor the motile behavior of cells to classify protrusions into the temporal stages of initial and established protrusions (Fisher et al.: Cell Motility and the Cytoskeleton 11:235-247, 1988), and to monitor the fixation of cells. **Multiple** parameter **fluorescence imaging** methods (DeBiasio et al.: Journal of Cell Biology 105:1613-1622, 1987; Waggoner et al.: Methods in Cell Biology, Volume 30, Part B, pp. 449-478, 1989) were then used to determine and to map

accurately the distributions of actin, myosin and microtubules in specific types of protrusions. Initial protrusions exhibited no substructure as evidenced by VEC and actin was diffusely arranged, while myosin and microtubules were absent. Newly established protrusions contained diffuse actin as well as actin in microspikes. There was a delay in the appearance of myosin into established protrusions relative to the presence of actin. Microtubules were found in established protrusions after myosin was detected, and they were oriented parallel to the **direction** of migration. Actin and myosin were also localized in fibers transverse to the **direction** of migration at the base of initial and established protrusions. Image analysis was used to quantify the orientation of actin fibers relative to the leading edge of motile cells. The combined use of VEC, multiple parameter immunofluorescence, and image analysis should have a major impact on defining complex relationships within cells.

L27 ANSWER 47 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1987-164300 [24] WPIDS
DOC. NO. NON-CPI: N1987-123170
DOC. NO. CPI: C1987-068315
TITLE: Image converter using optical waveguide strip plate laid over film - with photodiode at each end of strip for accurate conversion especially of X-ray picture.
DERWENT CLASS: A85 K08 L03 P31 P81 P82 P83 S03 S05 V07 W02
PATENT ASSIGNEE(S): (SIEI) SIEMENS AG
COUNTRY COUNT: 3

PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
DE 3543089	A	19870611	(198724)*		5
EP 227940	A	19870708	(198727)	GE	5
R: DE FR					
US 4778994	A	19881018	(198844)		5
EP 227940	B	19890927	(198939)	GE	
R: DE FR					
DE 3665939	G	19891102	(198945)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
DE 3543089	A	DE 1985-3543089	19851205
EP 227940	A	EP 1986-116168	19861121
US 4778994	A	US 1986-915709	19861006

PRIORITY APPLN. INFO: DE 1985-3543089 19851205
AN 1987-164300 [24] WPIDS
AB DE 3543089 A UPAB: 19930922
Image converter, for converting image information stored in a film into a

series of electric signals, has an area which can be fixed to the film and a line-scanning light ray directed onto this area, the area being optically connected to a photoelectric transducer through a waveguide. The novelty is that the waveguide is a strip-shaped plate, one large surface of which is placed on the storage film, whilst there is a photodiode at each narrow end.

The plate contains a **fluorescent** substance to shift the wavelength, pref. to convert the incident light of an Ar laser of 488 nm (blue) to light of 570 nm (yellow). This may be a dihydroxy naphthaldazine phosphor; or a Eu-activated Ba polyhalide (FClBr) phosphor, e.g. BaFClBr:Eu or Tb-activated La oxybromide, e.g. LaOBr:Tb, phosphor in acrylic glass.

USE/ADVANTAGE - The detector is suitable for scanning X-ray pictures and gives high accuracy over a wide density range.

2/5

ABEQ EP 227940 B UPAB: 19930922

Device for translating the picture information contained in a memory layer into an electrical signal sequence, having a surface provided with means for attaching the memory layer,and a scanning light beam (23) directed at this surface, the scanning beam (23) and the surface being so disposed that they can be moved lengthwise and crosswise with respect to one another, in the **direction** of a line **scanning** and a line change, and the scan area being connected optically to a photo-electric transformer (6) by way of a light guide (22), characterised in that the light guide (22) is a strip of rectangular cross-section, which is located with one main surface thereof against the memory layer, and on each of whose narrow endfaces a photo-semiconductor (6) is arranged.

ABEQ US 4778994 A UPAB: 19930922

Appts. for converting image information in a storage layer into an electrical signal scans the storage layer surface with a light beam and includes a photoelectric transducer for generating the signal. A light conductor transmits light from the storage layer to the transducer and is disposed following the storage layer in the direction of propagation of the light beam. The light conductor is a strip with a rectangular cross-section; it has a major face disposed against the storage layer and an end face (a minor face) optically coupled to the transducer.

The light conductor may be of acrylic glass and it may contain **fluorescing** substance, e.g. dioxy naphthal diazine luminophore or Eu activated Ba **multiple** halogenide.

USE/ADVANTAGE - Stored X-ray images can be read with high precision over a large range of optical density.

L27 ANSWER 48 OF 48 WPIDS COPYRIGHT 2004 THOMSON DERWENT on STN
ACCESSION NUMBER: 1982-K8193E [33] WPIDS
TITLE: Line segment imaging optical scanner - uses **multiple time integration** detectors, receiving line segments via skewed lens array and integrating to enhance exposure.
DERWENT CLASS: P81 S06 W02
INVENTOR(S): SEACHMAN, N J

PATENT ASSIGNEE(S): (XERO) XEROX CORP
COUNTRY COUNT: 5
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG
EP 57584	A	19820811	(198233)*	EN	13
R: DE FR GB					
US 4348593	A	19820907	(198238)		
CA 1171528	A	19840724	(198434)		
EP 57584	B	19851121	(198547)	EN	
R: DE FR GB					
DE 3267480	G	19860102	(198602)		

APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 57584	A	EP 1982-300461	19820129

PRIORITY APPLN. INFO: US 1981-229375 19810129
AN 1982-K8193E [33] WPIDS
AB EP 57584 A UPAB: 19930915
The scanner performs line by line scanning of a document illuminated by two **fluorescent** lamps interposed between an object line and a field stop. A skewed array of lenses images line regiments onto an area array of detectors, oriented perpendicularly to the object line. The lenses are arranged on an axis tilted w.r.t. the axial direction of the object line, so that the information carried by each of a number of segments of the line is projected onto a predetermined detector unit.

The detector units consist of a number of **multiple** time delay integrator (TDI) detector segments. The exposure of each group of TDI detectors is summed, which **multiplies** the exposure of a single lens system by the number of chosen detector lines in each segment. The grouped detectors are pref. separated by a space sufficient to accommodate partially-vigretted images from adjacent segments.

ABEQ EP 57584 B UPAB: 19930915
Appts. (10) for scanning an original document line-by-line to produce signals indicative of the information contained in each line (14) scanned, including a number of arrays of photodetectors (24) arranged in a rectangular area, there being an incremental lens (12a-12d) positioned between each array of photodetectors and an incremental portion (14a-14d) of the line being scanned, the incremental lens axes being parallel to each other, the lenses being coplanar, and in which the arrays (24a-24d) of photodetectors are mounted on a single **chip** (24), characterised in that each array (24a-24d) comprises a number of lines (30,32) of photodetectors covering a rectangular area to form a group of time delay and integration components, with the lines thereof being substantially perpendicular to the document-**scanning direction** (V1), and the groups being spaced apart in the same

direction by a distance (d) which is sufficient to accommodate partially-vignetted images from adjacent segments of the line being scanned, whereby the signal-to-noise ratio is significantly improved.